DOCUMENT RESUME

ED 092 387 SE 017 958

TITLE	An Annotated Catalog of Environmental Learning Resources.
INSTITUTION	Ohio State Dept. of Education, Columbus.; Willoughby-Eastlake School District, Willoughby, Ohio.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
PUB DATE	73
NOTE	56p.
EDRS PRICE	MF-$0.75 HC-$3.15 PLUS POSTAGE
DESCRIPTORS	*Annotated Bibliographies; *Catalogs; Elementary School Science; *Environmental Education; Instruction; *Instructional Materials; *Reference Materials; Resource Materials; Science Education; Secondary School Science
IDENTIFIERS	*Elementary Secondary Education Act Title III; ESEA Title III

ABSTRACT

This catalog lists material directly applicable to programs in environmental education. It is organized into two major divisions: (1) classroom aids--materials developed for direct use by students, and (2) reference materials--basic resources for the teacher. Classroom aids are divided into areas of environmental awareness, ecological concepts, current problems, and nature study. Reference materials include reviews of manuals of outdoor and conservation education techniques, annotated lists of periodicals, and bibliographies and further sources of information. A subjective description of the content of each teaching resource is supplied; address of the publisher or distributor, the price, and the grade level for which the resource is appropriate are provided. Resources are indexed by title, subject, format, grade level, and related discipline. (DT)

ED092587

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

An Annotated Catalog of

ENVIRONMENTAL LEARNING RESOURCES

BEST COPY AVAILABLE

SE 017 958

STATE BOARD OF EDUCATION

John R. Meckstroth, President, Cincinnati
William H. Cossler, Vice-President, Youngstown
William M. Baker, Madison
Wallace E. Blake, Zanesville
Thaddeus Garrett, Jr., Akron
Susan D. George, Canton
William M. Judd, Cincinnati
Everett L. Jung, M.D., Hamilton
Robert A. Lyons, Sr., Dayton
Mildred R. Madison, Cleveland
Roy D. McKinley, Coshocton
Ward M. Miller, Portsmouth
Gene Norris, Berea
David R. Rittenhouse, Toledo
Anthony Russo, Mayfield Heights
Thomas J. Russo, Maple Heights
Wayne E. Shaffer, Bryan
Cecil M. Sims, Piqua
Frances S. Voke, Columbus
Paul L. Walker, Bexley
Robert W. Walker, Adena
Robert E. Williams, Xenia
Martha W. Wise, Elyria

Urbanization, industrialization, and advancing technology have brought changing life styles and a radically altered physical world. We have begun to realize, in our technology-centered society, that we must re-orient ourselves to protect and preserve the natural world which we have inherited.

Awareness of and concern for the environment are rapidly becoming important aspects of learning. Schools are beginning to develop, improve and supplement environmental curricula. A need for instructional materials pertaining to this subject has become a high priority — an imperative.

Established August 15, 1971, the Center for the Development of Environmental Curriculum is administered through the Ohio Department of Education and the Willoughby-Eastlake City Schools of Willoughby, Ohio. The center is an ESEA Title III project funded to develop environmental education materials for Ohio schools. One of the objectives of the project is to gather, analyze and classify resources which educators may find useful in teaching effectively about our environment. This catalog is a result of that effort.

Martin W. Essex

Martin W. Essex
Superintendent of Public Instruction

An Annotated Catalog of

ENVIRONMENTAL LEARNING RESOURCES

Page

Introduction 2

Classroom Aids (for students)

- Environmental Awareness 3
- Ecology Concepts 10
- Current Problems 18
- Nature Study 24

Reference Material (for teachers)

- Outdoor Education 27
- Periodicals 32
- Looking Further 38

Index

- Title 42
- Subject 44
- Format 46
- Grade Level 48
- Related Discipline 50

INTRODUCTION

This catalog lists material directly applicable to programs in environmental education. It is organized into two major divisions: Classroom Aids and Reference Materials. Classroom Aids are those materials developed for direct use by the students, while Reference Materials deal with basic resources for the teacher: guides, environmental magazines, and handbooks of teaching ideas.

A natural progression exists from developing an awareness in students, to working through some basic ecological principles, and then applying this knowledge to the contemporary world. Therefore, Classroom Aids are divided into areas of Environmental Awareness, Ecological Concepts, and Current Problems. Nature Study became the fourth area of Classroom Aids; it offers a comfortable approach to begin increasing awareness and understanding of the environment.

Reference Materials, the second section, includes resources the teacher can use to expand and develop his teaching. The first area, Outdoor Education, reviews manuals of outdoor and conservation education techniques. Periodicals furnish current information and educational activities pertaining to environmental matters, and can be an effective classroom resource. The final section, Looking Further, lists bibliographies and further sources of information.

Each resource has been examined, and a subjective description of its content is supplied. Because most have not been tested in local classrooms, the apparent good points of the resource have been stressed, and some defects may not have been noticed. Feedback on the effectiveness of the material would be welcome.

Following the title of each resource are the address of the publisher or distributor, the price, and the grade level for which the resource is appropriate (coded as follows: P for primary, or kindergarten through third grade; I for intermediate, or grades four through six; J for junior high, or seventh through ninth grades; and S for senior high, or tenth through twelfth grades).

Resources are indexed by title, subject, format, grade level, and related discipline. Please note that index numbers refer to consecutively numbered entries, not pages.

Many people have helped create this catalog. Its success, however, now relies most heavily on your help. Use it. Let it prompt new ideas.

Center for the Development of Environmental Curriculum

Classroom Aids

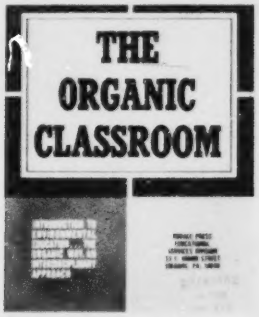
ENVIRONMENTAL AWARENESS

1.
A PLACE TO LIVE
National Audubon Society
950 Third Avenue
New York, New York 10002
75¢ **I**

This workbook is full of activities and ideas for the elementary school student correlated with seven walks in the neighborhood. Emphasis is placed upon experience and observation of everyday phenomena, mapping the neighborhood, trees, local plants and animals, leading to an appreciation of the child's whole environment.

2.
MY BOOK OF THINGS TO SEE AND DO IN THE OUT-OF-DOORS
By Dean Freund
Outdoor Education Department
Worthington City Schools
600 West Dublin-Granville Road
Worthington, Ohio 43085
$3 **P**

Introducing first graders to spring in the outdoors, this workbook focuses on plants, animals, rocks, and weather.



3.
THE ORGANIC CLASSROOM
Rodale Press
Educational Services Division
33 East Minor Street
Emmaus, Pennsylvania 18049
$2 **P**

The Organic Classroom is designed to introduce students to the concept of organic living through an activities-oriented overview. It is designed for elementary school use, and its approach is interdisciplinary. Each chapter opens with background information and includes activities, purposes for the activities, and materials needed for the activities.

4.
SCHOLASTIC EARTH CORPS SERIES
Scholastic Magazines
50 West 44th Street
New York, New York 10036
$1 **I**

Consisting of four units, this series is a good supplement to the fifth or sixth grade class. Titles are: Look Around You, First Follow Nature, Sharing the Earth, and Earth Is My Home. A teaching guide consisting of teacher background information, a discussion of the environmental crisis, and study and activity suggestions accompany each unit. The series incorporates a multi-media approach with posters, overhead transparencies, charts and records. Through using the series as workbooks, students become involved in the program.

5.
I WONDER WHY READERS
By Lawrence F. Lowery and Evelyn Moore
Holt, Rinehart and Winston
645 North Michigan Avenue
Chicago, Illinois 60611
$58 **P**

Designed to supplement and extend language arts and science programs, these full-color books emphasize reading as a personal experience and offer a wide range of readability and interest levels. Combining three dimensions of science (process, content, and wonderment) with a pleasurable story experience, the high-interest stories stimulate the student's imagination and promote self expression, critical thinking, creativity and discussion. Emphasis is placed on sensory activities as well as reading. Titles are: Soft as a Bunny, Look and See, Our Very Own Tree, Teddy the Taster, Tommy's Turtle, How Does a Plant Grow? and many, many more. A valuable aid to any primary classroom.

6.
ADVENTURE IN ENVIRONMENT
By National Environmental Education Development
Silver Burdett Company
Morristown, New Jersey 07960
$1.56 **I**

Beginning with the premise that the attitudes of people are a very special part of their environment, determining whether it will be maintained or polluted, this program emphasizes the necessity of new eyes and ears and minds

to see and hear and understand the environment. Five ecological strands (patterns, adaptation, change, independence, and diversity) unify the program as it touches upon the affective area of learning in science, poetry, art, and social studies.

7.
SOIL: A FIELD TRIP GUIDE
8.
WINTER: A FIELD TRIP GUIDE
9.
SMALL WORLDS: A FIELD TRIP GUIDE
By Helen Ross Russell
Little, Brown and Company
34 Beacon Street
Boston, Massachusetts 02106
$3.95 each **P, I**

Three hardcover books tie in field trip activities with some broad ecological concepts, such as soil formations and habitat. In the reading, activities acquainting the student with his environment are suggested. Pleasant and informative, these artfully done books are fine readers.

10.
ENVIRONMENTAL STUDIES PACKETS I-IV
Box 1559
Boulder, Colorado 80302
$5 per packet **P, I, J, S**

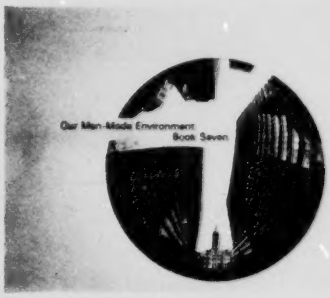
Each packet contains 25 colored activity cards suggesting an action and some follow-up. Advocating self-directed studies stressing the development of a student's self esteem and sense of worth, these materials suggest activities ambiguous enough to involve the student's own choice, and free enough to help the student set his own goals and expectations. The packets reflect their authors' enthusiasm for open learning environments, individual projects, and an informal atmosphere in education.

11.
ENVIRONMENTAL EDUCATION ACTIVITIES
Conservation Center for Creative Learning
863 Sweetwater Street
Lander, Wyoming 82520
$6 **P, I**

A group of five-by-eight cards listing some activities to run in conjunction with topics about earth, air, water, and people. Student-geared and non-sequential, each lesson takes only about an hour to do. The four categories are air, water, earth, and life, with nearly 250 activities listed.

12.
ECOLAB: LEARNING CONCEPTS
By J. L. Johnson and J. H. Mann
Benefic Press
10300 West Roosevelt Road
Westchester, Illinois 60159
$33.30 **P, I**

Ecolab is a box full of cards listing different activities for urban and rural environmental studies. Its purposes are to supplement other types of learning, l[illegible] education with life, develop a deeper appreciation of the environment, involve the student in inquiry and problem solving, and assist in solving environmental problems. The neighborhood, the street, and traffic are examples of urban studies; open space, forest, and stream are examples of rural studies. The teacher must plan how to incorporate these activities into the topics being taught.



13.
OUR MAN-MADE ENVIRONMENT
Group for Environmental Education
1214 Arch Street
Philadelphia, Pennsylvania 19107
$4.95 **I**

Four basic questions form the substance of this book: What is the man-made environment? Why do we build the man-made environment? What forces affect the shape of the man-made environment? And how can we change the man-made environment? Problem-solving exercises and activities call on the student to utilize his judgment and creativity. Punch-outs and other "hands-on" activities act as catalysts to further inquiry.

14.
INTRODUCTORY UNIT TO THE URBAN ENVIRONMENT
Group for Environmental Education
1214 Arch Street
Philadelphia, Pennsylvania 19107
$2.50 **I, J, S**

A workbook aimed at introducing the relationship between the urban environment and the quality of our daily lives through selected readings and other activities.

15.
LEARNING TO GET AROUND
Group for Environmental Education
1214 Arch Street
Philadelphia, Pennsylvania 19107
$1.50 **I, J, S**

A workbook employing the city as the medium for learning mapping skills. Part of the book deals with Philadelphia, but it is applicable to different locations.

16.
HOUSING IN THE URBAN ENVIRONMENT
Group for Environmental Education
1214 Arch Street
Philadelphia, Pennsylvania 19107
$1.50 **I, J, S**

A workbook aimed at introducing different housing concepts, housing types and citizen responsibility through role playing and readings.

17.
COMMUNITY RESOURCES FOR THE DURHAM CHILD DEVELOPMENT CENTER
Group for Environmental Education
1214 Arch Street
Philadelphia, Pennsylvania 19107
$1 **I**

This guide book to the community resources surrounding an experimental elementary school in Philadelphia is beautifully written. It illustrates a unique approach to using the resources immediately available to every school for the enrichment of its children.

18.
SUGGESTED ACTIVITIES USING THE SCHOOL AND ITS SURROUNDINGS AS A RESOURCE
Group for Environmental Education
1214 Arch Street
Philadelphia, Pennsylvania 19107
$1 **I**

An idea book for teachers and educators of some 60 suggestions for learning activities about the man-made environment, using the school buildings and their immediate environs as the basic resource. Suggested activities are related to getting to school, land and room use, population and statistics, and parallels between the natural and man-made environments.

19.
ENVIRONMENTAL ACTION: NO TIME TO WASTE
Office of Environmental Affairs
Continental Can Company
633 Third Avenue
New York, New York 10017
Teachers' kits $7.50 each
Workbooks 35¢ **I**

This is an excellent program for teaching environmental awareness to middle elementary children. Told in comic book fashion with superb visuals, this is the story of the battle between "Ecokid" and "Punk Polluter." The text deals with real questions: Will pollution overtake the earth? Can you stop it? It also offers "new hope for litter fighters" and a method to "plan next year's environment now!" by outlining a 30-day plan to "a more powerful ecology."

20.
RECYCLING RESOURCES, ENVIRONMENTAL ACTION
Office of Environmental Affairs
Continental Can Company
633 Third Avenue
New York, New York 10017
Teachers' kits $12.50 each
Workbooks 35¢ **J**

Included in this program is a comprehensive teacher's manual, containing lesson plans, a bibliography, sources of environmental information, and the objectives of each lesson. Also included are two sound filmstrips, pollution simulation games, and a student handbook. The first of the color filmstrips deals with interdependence and concentrates on the effects of what appears to be a simple action: spraying crops to rid them of destructive insects. The second suggests that pollution and depletion of our limited resources are the result of our present way of life. Four individual game packets, each requiring seven students to play, are intriguing as well as an excellent learning experience. The teacher may have up to 28 students actively playing at the same time, each group competing with the others.

21.
OPERATION NEW YORK
Board of Education of the City of New York
Publications Sales Office
110 Livingston Street
Brooklyn, New York 11201
$1.50 **P, I, J, S**

The group responsible for the preparation of this report set out to do something that would help teachers use the outdoor environment of the city as a resource for enriching their teaching. The report suggests ways in which rocks,

water, soil, plants and animals may be used to provide meaningful and enjoyable experiences for boys and girls. It is a guide to many interesting earth forms: hills, plains, rock outcrops, lakes, rivers, harbors and beaches. Use is made of the locale of the school — the school yard, nearby buildings, excavations, sidewalks and curbs — for an understanding of man's use of earth resources. Attention is directed to forces of nature at work: erosion of soil in a vacant lot or nearby park, formation of little flood areas following a storm, the wearing away of stone, the decay of leaves into soil. The interrelationships of living things, including man, with their physical surroundings are understood as boys and girls explore the many "little environments" which are found within the city.

22.
CLEAN THE SCENE
Consumer Markets Division
Kodak
Rochester, New York 14650
Free, or 50¢ each in quantity **P, I, J, S**

This kit contains a box of display photos on environmental subjects and a booklet of pictures taken by students, youth groups, conservation organizations, clubs, and businesses, illustrating various aspects of the environment, such as pollution, natural areas, wildlife, and beautification projects. Tips on photography are included. The attractive booklets may be sold as a class or group money-making venture.

23.
OBSERVING OUR ENVIRONMENT THROUGH OUR SENSES, UNIT 1
Muscatine-Scott County School System
1523 South Fairmount Avenue
Davenport, Iowa 52802
Limited copies free **P, I**

This collection of activity guides was produced for the Handicapped Children's Nature Study Center in Davenport, Iowa. However, the guides are designed to be used in any outdoor area by elementary teachers of either handicapped or normal children. The emphasis is on making the students more sensitive to their environment by the use of all senses. Purpose, objectives, concepts, and activities are described separately for each of the five senses. Also included are teachers' guides for four activities at the Nature Study Center in Davenport, titled Dike Hike, Fall Walk, Tree Planting, and Tracking. Each guide includes a list of resource materials and suggestions for further activities.

24.
ENVIRONMENTAL EDUCATION INSTRUCTIONAL ACTIVITIES
Leasco Information Products
P. O. Drawer O
Bethesda, Maryland 20014
60¢ microfiche
10¢ per page hard copy **P, I**

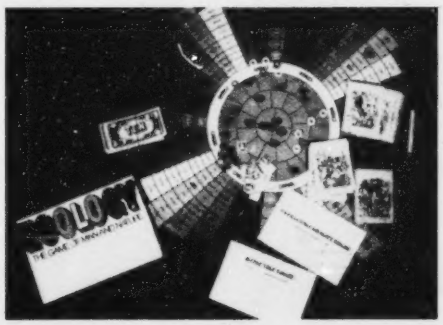
One in a series of two teachers' guides dealing with environmental education, this publication by the New York State Education Department for grades K-6 contains basic concepts, activities, and questions designed to emphasize the primary role of man as a participant in, rather than master of, his natural surroundings. Topics include survival, interdependence, scarcity, recycling, right vs. responsibility, planning, valuing, social forces, and optimism. For each concept or generalization, activities are suggested, accompanied by several probing questions. Activities are not intended to reflect a subject matter orientation. Three appendices provide useful information: a list of subject headings and topics pertinent to the environment; periodical, general, and film indexes featuring environmental concerns; and individuals, groups, and government agencies that may serve as or furnish classroom speakers on the environmental issue.

25.
DILEMMA!
North Dakota Studies, School Book Division
Box 228
Bismarck, North Dakota 58501
$15 **S**

A simulation game for high school social science use.

26.
CLEAN-UP
Urban Systems
1033 Massachusetts Avenue
Cambridge, Massachusetts 12138
$5 **P**

A hop-scotch type game in which the players hop about the game area collecting trash cans in each of six locations in the "town," and replace them with "beauty" tree cards, flower cards, and trash cans. This simple game involves only the "litter" and "beautify America" concepts.



27.
ECOLOGY, THE GAME OF MAN AND NATURE
Urban Systems
1033 Massachusetts Avenue
Cambridge, Massachusetts 12138
$7 **J**

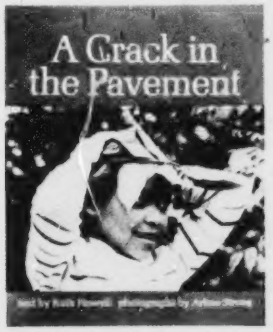
Pitting money, population growth, and consumption against ecology points, Ecology uses four different "ages" to develop the idea of the interaction of developing cultures and ecology.

28.
MAN IN HIS ENVIRONMENT
Coca-Cola Service
310 North Avenue
Atlanta, Georgia 30301
$10.95 **I**

Coca-Cola has put together a packet containing two simulation games. One concerns life support systems on a spaceship to Mars, and the other is involved with the development of a town.
The methods of playing both games are similar: the students are confronted with a problem, the pros and cons of the situation are discussed, and a decision is reached. The consequences of this decision influence the next situation. Extremely adaptable to a social studies class, the game can be played for short intervals over a period of weeks. One minor problem: the game can bog down as role responses become stereotyped. Teachers must supply challenging new aspects to break the doldrums.
In Rescue in Space, students utilize a chart of the spaceship to discuss the allotment of the resources available to them, given the limitations of the ship. After this has been decided, and the flight is in progress, the curve is thrown—they must rescue four people stranded on Mars. This doubles the population of the spaceship, and the limited resources are put under great strain. The natural extension of the situation? The earth as a spaceship. The teacher can help the students do some critical evaluation of the situation.
Each player in Make Your Own World picks a card to identify his role. Then various improvements are suggested. Players list the pros and cons and pertinent facts of each improvement, including reservoir, highway, shopping center, industrial park, wildlife preserve, and high-rise apartments. The improvements are discussed and voted upon, being put on the board if approved. Each addition alters the next decision.

29.
EVERYTHING CHANGES
By Ruth Read Howell
Atheneum Press
122 East 42nd Street
New York, New York 10017
$4.50 **P**

A reader for primary grades. Common occurrences, familiar to every school child, are highlighted through the seasons of the year. The students' relationship with the changes is emphasized, as well as the natural phenomena.



30.
A CRACK IN THE PAVEMENT
By Ruth Read Howell
Atheneum Press
122 East 42nd Street
New York, New York 10017
$4.50 **P**

The natural world in the city environment is as abundant as you observe it to be. This appealing book points out many natural features of this environment that are too often overlooked.

31.
MY SENSES AND ME
Encyclopedia Britannica Educational Corporation
425 North Michigan Avenue
Chicago, Illinois 60611
$53.32

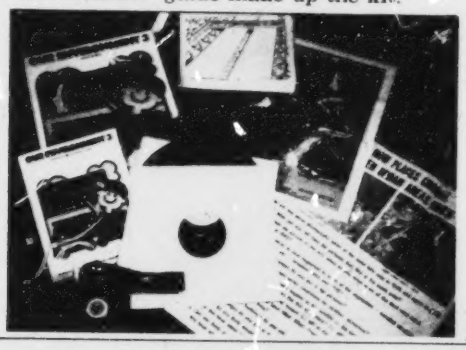
A sound filmstrip set including four cassette tapes and guides to the filmstrips, especially applicable in the language arts class. By using his senses, the child develops a greater sensitivity to and appreciation for his total environment. Following the filmstrip supportive activities are suggested. Titles are: What Do I Hear When I Listen? What Do I See When I Look? What Do I Feel When I Touch? What Do I Smell and Taste?

32.
OUR ENVIRONMENT II: SOUND AND NOISE
EMC Corporation
180 East Sixth Street
St. Paul, Minnesota 55101
$30 **I**

One of five kits (others are listed under Ecology Concepts), this packet deals with the nature of sound, people's responses to it, and the problem of noise pollution. Two filmstrips and a wall chart compose the package, as well as a teachers' guide with suggested activities.

33.
OUR ENVIRONMENT III: AESTHETICS
EMC Corporation
180 East Sixth Street
St. Paul, Minnesota 55101
$32 **I**

Contrasting optimum environments with our present one, this program introduces concepts of planning communities and their importance. Two filmstrips and two wall charts as well as a teachers' guide make up the kit.



34.
ENVIRONMENTAL AWARENESS, AN ACTION APPROACH
Bureau of Indian Affairs
1951 Constitution Avenue N. W.
Washington D. C. 20242
Free **I**

This booklet was designed to help teachers and students learn the relationships of soil, water, plants, rocks, microscopic life and wildlife to the human race. The activities were selected to aid teachers and students to begin a project without too much equipment and preparation. The subject matter can be as limited or broad as the situation dictates and should lead to productive community action projects. A fine guide for schools and teachers across the country.

35.
ACCLIMATIZATION: A SENSORY APPROACH TO ECOLOGICAL ENVOLVEMENT
By Steve Van Matre
Marion Jordan
444 Comfort Lane
Palatine, Illinois 60067
$2 **P, I, J**

Approaching the environment through total use of the senses, this book documents the program of Towering Pines Camp. It takes the reader into the marsh, the field, the forest, right along with the campers, sharing their leaping awareness of the environment. An extensive "how and why" section lists some of the camp activities and tells why they were selected. An important alternative in environmental education techniques, and education in general.

36.
SCIENCE IN CITY AND SUBURB
Xerox Education Center
1250 Fairwood Avenue
Columbus, Ohio 43206
40¢ **J**

This handbook helps students explore the natural forces at work in the schoolyard, neighborhood, and community. Playground equipment, buildings, sidewalks, and people are all examined in enjoyable and easy activities. Observation projects, pollution studies, and activities building an awareness and appreciation of the diversity that can be found in an industrial setting make this booklet a good educational experience.

37.
EXPERIENCES WITH LIVING THINGS
By Katherine Wensberg
Beacon Press
25 Beacon Street
Boston, Massachusetts 02108
$4.95 **P**

Introducing ecology to very young students calls for a special way of teaching. This is a warm and tender book to be used in day schools and nurseries, but every classroom teacher should have a chance to try the experiences with his students. University professors will enjoy reading it, too.

38.
ENVIRONMENTAL AWARENESS
By Robert O. Joslin and Larry West
Centron Educational Films
1621 West Ninth Street
Lawrence, Kansas 66044
$59.50 **P**

Designed to promote an awareness and appreciation of man's physical environment, these five filmstrips sharpen students' sensory perception of their surroundings and provide an ideal starting point for instruction in environmental studies. The unusual photography, the wordlessness of three of the filmstrips, and the interdisciplinary nature of the topics make this an excellent teaching aid.

39.
EXAMINING YOUR ENVIRONMENT
Mine Publications
25 Groveland Terrace
Minneapolis, Minnesota 55403
$2.50 **I**

This series is a colorful, well-planned program investigating aspects of the environment. By gathering first-hand information individually and in groups, by responding to creative and stimulating problems, and by digging deeper into suggested projects, students become more aware of the ordinary workings of their surroundings. The sturdy pamphlets contain about five different studies on each topic, introducing facts not usually learned in school — fixing faucets, for example. Titles in the series are Astronomy, Birds, The Dandelion, Ecology, Mini-Climates, Pollution, Running Water, Small Creatures, Trees, and Your Senses.

Classroom Aids

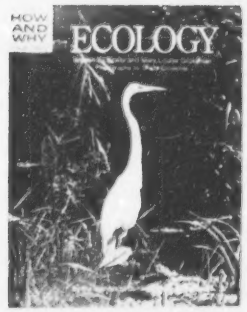
ECOLOGY CONCEPTS

40.
ECOLOGY
Xerox Education Center
1250 Fairwood Avenue
Columbus, Ohio 43206
35¢ each **I**

A series of pamphlets which gets to the core of the environmental crisis by making students aware of the delicate balance that exists between all forms of life and their supportive habitats. Each colorful pamphlet helps students grasp four basic ecological concepts: the diversity of life, interrelationships between living and non-living things, adaptation of organism to environment, and continual change. Through the use of various questions, critical thinking on the part of the student is encouraged. Titles in the series include Nature and Needs, Habits and Habitats, and Problems and Progress.

41.
YOU AND YOUR ENVIRONMENT
Xerox Education Center
1250 Fairwood Avenue
Columbus, Ohio 43206
75¢ for set of two **J**

A two-part ecology study covering an array of material. Diversity, Adaptation, Interrelationships, Cycles and Chains, Succession, and Disruptions are the primary divisions. Critical thinking is encouraged through various guide questions. Numerous puzzles, cartoons, and activities are included.



42.
THE HOW AND WHY WONDER BOOK OF ECOLOGY
By Shelly and Mary Grossman
Grosset and Dunlap
51 Madison Avenue
New York, New York 10038
$1.50 **I**

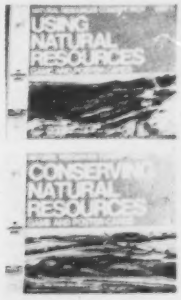
Basically this book takes a look at the different ecological biomes in the United States, first asking a question, and then developing an answer. Presupposes some knowledge of natural science.

43.
UNDERSTANDING ECOLOGY
By Shelly Grossman
Grosset and Dunlap
51 Madison Avenue
New York, New York 10038
$3.95 **J, S**

A more advanced version of the How and Why Wonder Book, Understanding Ecology deals in the first half with the different biomes present in the country and the relationship among their inhabitants. The other half investigates camouflage, competition, territory, and other ecological concepts as they relate to the environment. More a special interest book than a teaching aid, it could serve as an introduction to ecology. For special projects of individual interest.

44.
WHERE PEOPLE LIVE CONCEPT PACK
UNIT I: CLIMATE AND LAND
UNIT II: SHELTER AND FOOD
Milton Bradley Company
Springfield, Massachusetts 01101
$7.50 per pack **I**

Both units consist of board games and poster cards for elementary school students. In Unit I, twelve posters are representative settings and provide a basic supplement to the study of physical landscape. Students gain a valuable impression of the earth's surface and impact of climate on the land by viewing these scenes.
Unit II, Shelter and Food, presents characteristic housing and food production in four widely divergent parts of the world: cold lands, tropics, dry lands, and plains. Encourages students to observe each scene and speculate on the differences of food gathering and living throughout the world. The poster cards may be presented to large or small groups or used for individual research work. Information on the reverse of each card is intended to guide instruction and suggest departures for further study.

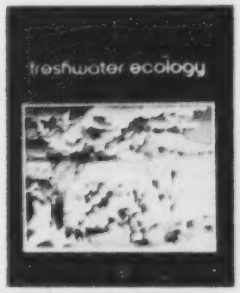


45.
NATURAL RESOURCES CONCEPT PACK
UNIT I: USING NATURAL RESOURCES
UNIT II: CONSERVING NATURAL RESOURCES
Milton Bradley Company
Springfield, Massachusetts 01101
$7.50 per pack **I**

Natural settings, man's use of these settings, and remedial measures are shown in posters which stimulate the student's thinking through observation, consideration of the importance of the settings to himself and to the world, and speculation on the future effects if resources are exploited and abused. Participation by two, three, or four students will lead to reinforcement of important concepts regarding resource usage.

46.
EXTINCTION — THE GAME OF ECOLOGY
Sinauer Associates
20 Second Street
Stamford, Connecticut 06905
$11.95 **J, S**

Extinction is a board game for two, three, or four players, designed both to entertain and to illustrate certain principles of ecology. The game deals with some of the key processes by which species survive and evolve or become extinct: reproduction, migration, mortality, competition, predation, and genetic change. It also illustrates the complex and sometimes devastating chain reactions which may be triggered by changes in the environment, particularly those caused by man.



47.
FRESHWATER ECOLOGY
Edited by William A. Andrews
Prentice-Hall
Englewood Cliffs, New Jersey 07632
$2.95 **J, S**

This book deals with the living things in and around ponds, lakes, rivers, and streams. It also explores the relationships between these living things and their environments.

48.
THE ECOLOGY OF THE FOREST
49.
THE ECOLOGY OF THE SEA
H. M. Stone Productions
Six East 45th Street
New York, New York 10017
$32 each **I**

An overview of the ecological relationships in the sea and in the forest, these two filmstrips present generalized information for intermediate students, and include workbooks for use with the filmstrips.

50.
INSTRUCTOR ECOLOGY SERIES — SET I
The Instructor Publications
Instructor Park
Danville, New York 14437
$3.95 **I, J**

A collection of twelve posters, each illustrating some facet of the ecosystem. Emphasis is placed on the interrelationships of the biotic and abiotic factors. Some of the titles: How Does a Thunderstorm Benefit Our Food Supply?

What Kind of Life Goes on around a Dead Tree? Can Moose and Wolves Survive Together? and How Does Rainfall Affect the Eagle Population?

51.
PROJECT ICE: A SUPPLEMENTARY PROGRAM FOR ENVIRONMENTAL EDUCATION
Project ICE (Instruction — Curriculum — Environment)
1927 Main Street
Green Bay, Wisconsin 54301

P, I, J, S

Ten broad concepts of environmental education were identified to serve as the organizing mechanisms for this curriculum. For each concept, activities are suggested in both science and social studies disciplines, emphasizing different problem orientations in different grade levels. Behavioral objectives in both the cognitive and affective domains are included, with skeletal lesson plans for the teacher. Inclusion of evaluative activities such as discussions, and integration of a concept into practical application readily correlate with the development of critical thinking skills. The following booklets are available:

Social Studies	K-12	$5 per set	Fine Arts	K-12	$1
Science	K-12	$5	Home Economics	7-12	$1.50
Language Arts	K-12	$5	Industrial Arts	7-12	$2.50
Math	K-12	$2	Business Education	9-12	$1
Health and Physical Education	K-12	$1	Agriculture	9-12	$1

52.
ENVIRONMENTAL INSTRUCTION
Conservation and Environmental Science Center for Southern New Jersey
RD #2, Box 2230
Browns Mill, New Jersey 08015
$1 **I**

A series of booklets involving natural history and science concepts. Each booklet states the grade level it was developed for, an overview, and objectives. Each unit contains a series of lessons developing the skills and concepts needed. Some titles: Forests: A Dichotomy Between Dollars and Dreams, Map and Compass Study, Everyone Talks about the Weather.

53.
ENVIRONMENTAL INVESTIGATION UNITS
National Wildlife Federation
1412 Sixteenth Street N. W.
Washington D. C. 20036
$2 **P, I, J, S**

These units are designed for the classroom teacher to use with minimal preparation. They are meant to be part of the existing curriculum—to complement and enhance what students are already experiencing. Each unit is complete in itself, containing easy-to-follow descriptions of objectives and methods, as well as lists of simple materials. Experience oriented. Titles include Snow and Ice, Differences in Living Things, Population Growth, Habitat Study, and Outdoor Activities.

54.
COMMUNITY OF LIVING THINGS
By Larry Coum
National Instructional Television
Box A
Bloomington, Indiana 47401
$35 **J**

A course of televised lessons in life science with an ecology orientation, Community of Living Things consists of 32 twenty-minute lessons for junior high grades. Including behavioral objectives and suggestions for further activities, the course covers a wide range of subjects under five main headings: Exploring Our Environment, Exploring Different Environments, Dynamics of Living Things, Interrelationships, and Man and Environment.

55.
ENVIRONMENTAL EDUCATION OBJECTIVES AND FIELD ACTIVITIES
Paducah Public Schools
Tenth and Clark Streets
Paducah, Kentucky 42001
$5 **P, I, J, S**

A collection of activities written and successfully carried out by local teachers in the Land between the Lakes, for all grade levels. The teacher may pick and choose among the various lessons as desired.

56.
THE AIR ABOVE, THE GROUND BELOW
By Kenneth Bobrowsky
Scholastic Book Services
50 West 44th Street
New York, New York 10036
$1 **I**

Lessons featuring projects and experiments deal with the common phenomena of natural science, basic geology, and a few glimpses of environmental problems. This booklet is in worksheet form and each lesson gives a question to investigate, materials needed, procedure, and questions for further investigation. An additional source would give the topics more depth.

57.
ENVIRONMENTAL EDUCATION STUDIES
Environmental Science Foundation
5400 Glenwood Avenue
Minneapolis, Minnesota 55422
$1 to $4 each $42.50 per set **P, I**

The series, geared to some extent for Minnesota, was developed through courses offered at the Environmental Science Center. The studies include questions and activities with the body of content information. The titles: Color and Change, Variation within a Species, Habitat Study, Nature's Art, Decade of Environmental Decision, The Plant Puzzles, Microclimate Measuring Techniques.

58.
A CHILD'S GARDEN: A GUIDE FOR PARENTS AND TEACHERS
Chevron Chemical Company, Ortho Division
200 Bush Street
San Francisco, California 94104
$1.50 **P, I, J, S**

A Child's Garden gives parents and teachers ideas and good concrete suggestions on helping children of all ages plant and maintain a garden. Plans for building a root-view box, distinctions between soil types, use of fertilizers, function of hormones are all discussed. Some of the suggestions for action lack detailed instructions, and some experiments are suggested but not defined step by step.

59.
WHAT LIVES IN THE WATER?
Urban Systems
1033 Massachusetts Avenue
Cambridge, Massachusetts 02138
$3 **I**

What Lives in the Water? is one of a series of "ecokits." Easy experiments for ages eight to adult let beginning ecologists discover how an ocean gets its color, what tiny plants and animals live in the water, and how they can help or harm each other, fish and people. Other kits include Why Are the Leaves Green? Life from Death, Predator Prey, and more.

60.
TEACHERS' CURRICULUM GUIDE TO CONSERVATION
Edited by Matthew J. Brennan
J. G. Ferguson Publishing Company
Six North Michigan Avenue
Chicago, Illinois 60602
$45 **P, I, J, S**

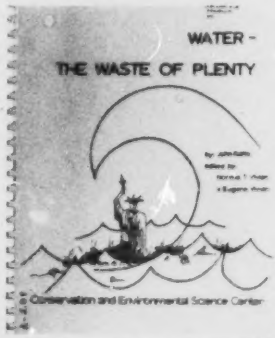
This series of curriculum guides, People and Their Environment, suggests an approach to the teaching of conservation as an integral part of various subject matter areas at all levels of education. It does not suggest that all of the material included be required or used, nor does it restrict the teaching of concepts to those included. The material is designed for use of teachers and curriculum workers, not for students' direct use. The series of five includes guides for biology (J), social studies (S), home economics (S), science (J), and outdoor laboratory (P, I, J, S).

61.
GUIDE TO ENVIRONMENTAL EDUCATION: CONSERVATION OF NATURAL RESOURCES
Conservation Committee of the Madison Public Schools
Madison, Wisconsin 53700
$4 **P, I**

A clear and concise listing of activities and resources concerning conservation. Areas covered include soil, water, minerals, wildlife, plants, and recreational resources. The second half of the booklet contains Conservation Quickies, a series of teaching aids. The final quarter of the book deals specifically with Wisconsin in maps of major soil regions, glacial deposits, fishery resources and a host of others.

62.
EDUCATION FOR SURVIVAL: SOCIAL STUDIES AND SCIENCE CURRICULUM GUIDE FOR GRADES 1, 2 and 3
North Jersey Conservation Foundation
300 Mendham Road
Morristown, New Jersey 07960
$5 **P**

A booklet listing concepts, activities and aids in outline form. Major divisions cover homes, yards, pets, water, plants, birds, community life, U.S. Indians, simple machines, and the United States today, to name but a few. Written in a clear and concise manner, this booklet is an excellent help to the elementary school teacher. Guides for grades four and five are also available, at $3 and $5 respectively.



63.
WATER — THE WASTE OF PLENTY
By John Raffo
Conservation and Environmental Science Center
Box 2230, R. D. 2
Browns Mill, New Jersey 08015
$1.50 **J, S**

Integrating water cycles, pollution problems, and soil relationships in a continuum, the author develops the problem of water utilization sequentially to give an overview of the role water plays in the ecosystem.

64.
GEOGRAPHY IN AN URBAN AGE: UNIT 5, HABITAT AND RESOURCES
By the Association of American Geographers
Collier-Macmillan School and Library Services
866 Third Avenue
New York, New York 10022
$42 for classroom kit for 30
$2.55 for six-unit course and teacher handbook, student workbook for ten **S**

The fifth of six units in the course Geography in an Urban Age, Habitat and Resources follows units on cities, manufacturing and agriculture, and cultural and political geography. The central theme of the units is man-land relationships; that is, the relationships that exist between human activities and the characteristics, either natural or changed by man, of a particular place. Students encounter examples of interactions of man and land in seven activities in a sequence of increasing complexity. Concentrating on student activities rather than just reading, Habitat and Resources requires five to six weeks to teach in its entirety, and emphasizes critical thinking techniques.

65.
CONTEMPORARY SOCIAL SCIENCE CURRICULUM
Silver Burdett
Morristown, New Jersey 07960
$5 to $7 per book **P, I**

An exemplary social studies curriculum of eight books, with the following titles: The Earth, Home of People; Families and Their Needs; People Use the Earth; Regions and Their Needs; This Is Man; Man and Society; Man and Change; Man and His World. Based upon the premise that the survival of the human race depends on man's ability to understand his environment and those who share it with him, the curriculum is designed to foster awareness in these areas in a way that is meaningful to pupils and applicable to the world they live in. The areas of anthropology-sociology, economics, geography, history, and political science are stressed; case studies are provided, and a questioning attitude fostered. Concepts and generalizations are the major criteria for organizing the curriculum, which places facts in a meaningful perspective to help students formulate understandings and generalizations.

66.
LIFE SCIENCE SERIES
Science Curriculum Improvement Study
Rand McNally and Company
Box 7600
Chicago, Illinois 60680
$1 to $2 each **I**

Part of a two-phase science program emphasizing both the physical science and life science sequences, the life science sequence draws heavily on environmental concepts. The six basic units cover organisms, life cycles, populations, environments, communities, and ecosystems. Using techniques of exploration, invention, and discovery, students develop thinking skills and approaches to problems along with learning the basic knowledge. The authors have tried to transform mere activities into experiences with meaning. Relying heavily on the teacher to insure success, the program emphasizes the study of living organisms and their relationships with their environment. Each basic unit contains about six parts, or a total of about twenty chapters. Advance preparations, teaching materials and suggestions, and optional activities are stated in each lesson.

67.
BENZIGER ECOLOGY SERIES
Benziger Incorporated
866 Third Avenue
New York, New York 10022
$1.20 each
30¢ to teachers **I, J**

A series of ecology pamphlets with such titles as The Forest, The Grasslands, Freshwaters, The City and The Suburbs. Each booklet comes with a teacher's guide.

68.
CIRCLE OF THE WORLD
Benziger Incorporated
866 Third Avenue
New York, New York 10022
$2.40 **I, J, S**

A collection of ecological readings by such authors as Steven M. Speecer, John H. Storer, and Garrett DeBell, this book is appropriate for intermediate grades or high school. A special teachers' section suggests various exercises, activities, projects and evaluation guides.

69.
A GUIDE TO THE TEACHING OF HUMAN ECOLOGY
Toledo Public Schools
Manhattan and Elm Streets
Toledo, Ohio 43600
Free (supplies are limited) **S**

A paperback designed to aid the instructor in teaching the concepts of human ecology. Sections include The Web of Life, Populations, Pollution, Urban Ecology, World Food Supply, and Environment and Heredity.

70.
ENVIRONMENTAL EDUCATION RESOURCE GUIDE
Compiled by William B. Stapp
Toledo Public Schools
Manhattan and Elm Streets
Toledo, Ohio 43600
Free (supplies are limited) **P, I, J, S**

A documentation of the operational Toledo program stresses environmental encounters in all disciplines and grade levels. By offering students active participation in situations stimulating discussions and value statements, the guide fosters critical choices of alternatives. An environmental inventory of Toledo includes basic resource information, environmental encounters and activities with behavioral objectives, field trip and tour opportunities, human resources, and instructional aids. Guidelines for the teacher in such areas as handling value questions, social change, controversy, and school site development are also included. This source book is oriented to an urban environment and dedicated to the goals of problem-solving, inquiry, and critical thinking techniques.

71.
ELEMENTARY SCIENCE STUDY
McGraw Hill Book Company, Webster Division
Manchester Road
Manchester, Missouri 63011
Cost of material for a class of 30 varies from $5 to $195.
P, I

Over 60 different pamphlet units encourage the student to interact with the teaching materials, checking his own ideas and the ideas of others in an experimental process. The self-contained units, dealing with such diverse topics as bones, pendulums, sand, mealworm behavior, kitchen physics, and microgardening, are part of an ungraded nonsequential system for science. The program seems most effective in classrooms where inquiry is encouraged and freedom to experiment informally permitted. The resource units offer considerable diversity in teaching and learning style as well as topics and organization. Objectives of the program include the development of curiosity, independence from the teacher, formulation of pertinent questions, a sense of responsibility, specific skills, and critical thinking. Film loops, films, class kits and worksheets are supplementary parts of units.

72.
OUR ENVIRONMENT V
EMC Corporation
180 East Sixth Street
St. Paul, Minnesota 55101

Three multi-media packets are available in this series:

FRESHWATER COMMUNITIES
$66 **I**

Including sound filmstrips, wall charts, and transparencies, this package explores the ecological relationships in streams, rivers, ponds and lakes, and man's effect on them.

ATMOSPHERE
$69 **I**

Weather, air cycles, the make-up and function of air, and man's effect on air compose the topics of this package, which includes four sound filmstrips, wall charts, transparencies, and an activity book.

SALTWATER COMMUNITIES
$61.50 **I**

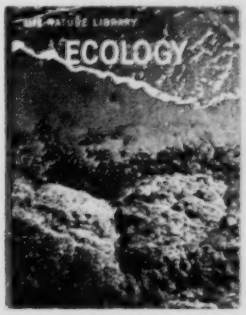
Studying saltwater habitats, resources of the ocean, and the complexity of the life support systems in the ocean, this package includes three sound filmstrips, wall charts, and suggested activities.

73.
INVESTIGATIONS IN ECOLOGY
By Beth Schultz and Phyllis Marcuccio
Charles E. Merrill Publishing Company
1300 Alum Creek Drive
Columbus, Ohio 43209
$9.95 **P, I**

Designed to develop investigatory skills, awareness of the interdependence among all forms of life, the concept of "spaceship earth," and other ecological concepts, these 68 activity cards offer activities in three parts: People and Environment; Plants, Animals, and Environment; and Earth: Life's Environment.

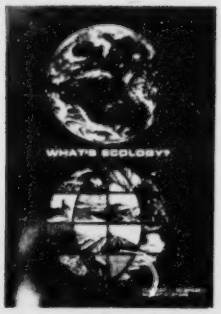
74.
ECOLOGY: THE STUDY OF ENVIRONMENT
By Schlichting and Schlichting
Steck and Vaughn Company
P. O. Box 2028
Austin, Texas 78767
$2.95 **I**

In this book, the interrelationships of man, plants, and animals are introduced to young readers with clear explanations, diagrams, and drawings. Man's effect upon environment is outlined, from the beginning of our nation to the present problems of over-crowded cities and pollution.



75.
ECOLOGY
By Peter Farb
LIFE Nature Library
Silver Burdett
Morristown, New Jersey 07960
$4.95 **I, J, S**

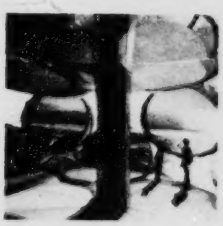
This is a very readable book, illustrated with quality photography, a good place to start reading about the science of ecology.



76.
WHAT'S ECOLOGY?
By Clifford C. Humphrey and Robert G. Evans
Hubbard Press
2855 Shermer Road
Northbrook, Illinois 60062
$1.50 paper bound
$3.95 hard cover **S**

A possible text for adult education, this slender book provides the basic information on ecological concepts needed to analyze and work with environmental problems in the home and community.

Dimensions of Change



77.
DIMENSIONS OF CHANGE
By Don Fabun
Glencoe Press
8701 Wilshire Boulevard
Beverly Hills, California 90211
$8.95 **S**

Change is the universal constant. Its treatment in this book includes the preparation for future changes. One chapter deals with ecology, but the other chapters on food, shelter, energy, communication, and transportation emphasize the complete interrelatedness of these aspects of life.

78.
A SAND COUNTY ALMANAC
By Aldo Leopold
Oxford University Press
200 Madison Avenue
New York, New York 10016
$6.50 **S**

This book, referred to by many environmental educators as a classic, develops the concept of a land ethic.

79.
GOVERNMENT PUBLICATIONS

Governmental agencies can supply a wealth of material geared to many aspects of environmental education. The federal government publishes lists of pamphlets available; these can be received at no cost by writing to

Superintendent of Documents
U. S. Government Printing Office
Washington D.C. 20402

Other good federal sources of environmental information are
U. S. Department of the Interior
C Street between 18th and 19th Streets N.W.
Washington D.C. 20240
and
U. S. Department of Agriculture
14th Street and Independence Avenue S.W.
Washington D. C. 20250

Several divisions within the Ohio Department of Natural Resources publish many educational aids. The Department of Natural Resources is located at
1930 Belcher Drive
Fountain Square
Columbus, Ohio 43224

80.
4-H PUBLICATIONS
Co-operative Extension Service
2120 Fyffe Road
The Ohio State University
Columbus, Ohio 43210

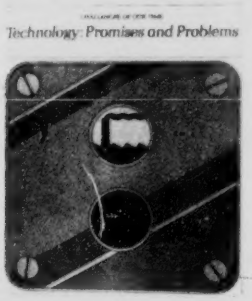
The 4-H organization offers several free publications. Exploring Ohio's Soils I and II, Ohio Birds, Exploring Our Forests, Water and You, Let's Explore the Outdoors I and II, and Tree Planting are some typical titles available. In workbook form, these pamphlets list activities directly concerned with their titles.

Classroom Aids

CURRENT PROBLEMS

81.
MAN'S HABITAT — THE CITY
National Wildlife Federation
1412 16th Street N. W.
Washington D. C. 20036
$1.50 **I, J, S**

Three studies designed to enable city school children to investigate, discover, and relate to their environment are outlined. Specific objectives, lists of materials, and preparation needed for each study are given. The first study orients the student and school in the community. The second study locates existing parks and play areas. Suggestions for student and community action follow. The third study describes a sampling procedure to develop a comunity profile. Methods of graphical presentation are described. An appendix provides sample summaries of surveys and indicates aspects of the community that may be surveyed.



82.
TECHNOLOGY: PROMISES AND PROBLEMS
Allyn and Bacon
Rockleigh, New Jersey 07647
$3.40 **J**

Part of the Challenges of Our Times Series prepared by the social science staff of the Educational Research Council of America, this book is a social studies outlook on contemporary challenges. Moving from the scientific revolution to the technological age, it poses thoughtful questions for discussion and evaluation. The problems of ecological balance, man's relation to the environment, and the two sides to the issue of pollution and technological strides are covered.

83.
POLLUTION OF THE ATMOSPHERE

84.
POLLUTION OF THE WATERS
H. M. Stone Productions
Six East 45th Street
New York, New York 10017
$32 each **I, J, S**

These two sound filmstrips present a general view of the pollution problem, giving the more visible problem situations but not going into them in depth. Included in the filmstrip guide are four work sheets for students.

85.
ECOLOGICAL SCIENCE SERIES
Charter School Books
Avenue of the Americas
New York, New York 10036
IT'S OUR WORLD $3.96 **I**
IT'S OUR ISLAND $3.42 **I**
IT'S OUR FUTURE $3.96 **I**
IT'S OUR CHOICE $3.96 **I**

A series of four books integrating challenging questions with ecological concepts in relation to the problems we face. By participating directly in investigations, students gain an understanding of the importance of preserving natural resources. Water cycles, biomes, city problems, pollution and the like are critically examined and discussed. The books include, along with the text, sections called Investigating on Your Own, Thinking It Over, Finding Answers, and others involving the student directly.

86.
EARTH ISLAND: AN INTRODUCTION TO ECOLOGY IN ACTION
Simon and Schuster, Educational Division
One West 39th Street
New York, New York 10018
$76.45 **I**

Three sound filmstrips, posters, and eco-data cards comprise this multi-media unit. The student's workbook is an assortment of comic-strip-like pages, question fill-in pages, and solid ecological information. The Community of Life, Man Changing the Environment, and Eco-Crisis! A Time for Decision are names of the three-part program. Activities are part of the handbook directions, and questions involving some real value decisions are repeatedly raised.

87.
OUR POLLUTED WORLD
Xerox Education Center
1250 Fairwood Avenue
Columbus, Ohio 43206
40¢ **I, J, S**

This well-illustrated pamphlet discusses the causes of air and water pollution, and shows how knowledge can be applied to solve our critical pollution problems. The pictures, maps, and drawings are excellent; review questions follow each major section.

88.
FOCUS ON POLLUTION
Text and photographs by John J. Dommers
Xerox Education Center
1250 Fairwood Avenue
Columbus, Ohio 43206
40¢ each **I**

Titles of these booklets are Kinds and Causes, A Field Trip, The Ugly Results, and Solutions and Controls. Each booklet is illustrated with color pictures and contains question and answer sections and some activities for students.

89.
CONTROL OF DOMESTIC RATS AND MICE
Cleveland Department of Health
601 Lakeside Avenue
Cleveland, Ohio 44114
Free **J, S**

This is a complete handbook, prepared and published by the U.S. Department of Public Health Service, on the understanding of domestic rat and mice ecology and their control. A chart of common rodenticides, characteristics, and antidotes is included.

90.
ENVIRONMENTAL RAT CONTROL
School District of Philadelphia
Instructional Services
Benjamin Franklin Parkway and 21st Street
Philadelphia, Pennsylvania 19100
Free **P, I**

These teachers' guides approach rat control from an ecological viewpoint. Included are activities with behavioral objectives and evaluation.

91.
OUR ENVIRONMENT: LET'S WORK TOGETHER TO CHANGE THIS
Cleveland Department of Public Health
601 Lakeside Avenue
Cleveland, Ohio 44114
65¢ **I**

A specific unit on the rat problem in the city offers background information on the rat, lessons and activities involving its relationship to the environment, and materials available. Behavioral objectives are included for the lessons, and leading questions foster critical thinking, beginning with the comprehension and application skills.

92.
CAN I BREATHE THE AIR?
Urban Systems
1033 Massachusetts Avenue
Cambridge, Massachusetts 02138
$6 **I, J**

This is one of a series of discovery kits (Ecology Kit 7) enabling students to gain a better understanding of air pollution through actual experimentation. Allows for measurements of carbon monoxide, sulfur dioxide, carbon dioxide. Discuses particulate matter, oxides of nitrogen, hydrocarbons, and ozone.

93.
POLLUTION: OUR WORLD IN CRISIS
Ward's Natural Science Establishments
P. O. Box 1712
Rochester, New York 14603
$40 **I, J**

This set of six filmstrips tells the urgent story of pollution in today's world. Specify Ward's 1972-73 Catalog #70 W 3800.

94.
ENVIRONMENTAL POLLUTION
By William H. Andrews
Prentice-Hall
Englewood Cliffs, New Jersey 07632
$2.25 **S**

Experiment after experiment fills the book, dealing with water and air pollution, both in the field and the laboratory.

95.
THE SEVENTIES: DECADE FOR DECISIONS
The New York Times
Book and Education Division
229 West 43rd Street
New York, New York 10036
$9 **J, S**

This filmstrip program explores technological changes that will affect the environment in this decade, outlining the challenge to young Americans to cope positively and morally with new developments. Realistic pictures evoke class discussion of the role of man, values and decision-making. A good introduction to the total environment of the U.S. in the '70's.

96.
MAN AND THE ENVIRONMENT
By the Educational Research Council of America
Houghton Mifflin Company
110 Tremont Street
Boston, Massachusetts 02107
$5.40 **J**

Learning how information is acquired as well as the information itself, a basic tenet of this program, is accomplished by structuring investigations so that the students learn as a direct result of their own activities. The second assumption of the program, that general ideas in life science have personal and social relevance, is demonstrated by helping students "develop insights about themselves, their biological environment, and the real-life problems where biology, technology, and society clash." The program goals include developing critical thinking techniques, inquiry approaches, interaction and variation concepts. Four basic units comprise the text: Investigating Living Things, The Environment Affects Living Things, Living Things Affect Each Other, and Man Affects the Environment.

97.
LIFE SCIENCE INVESTIGATION SERIES
Houghton Mifflin Company
110 Tremont Street
Boston, Massachusetts 02107

A change of pace in the classroom through games, simulation and role-playing often stimulates student interest. This series includes four simulation activities:

THE REDWOOD CONTROVERSY $7.50 **J**

Students take roles in a Congressional debate concerning preservation of the natural environment, examining the social, political, and economic aspects of ecological problems.

THE MOUSE IN THE MAZE $6 **J**

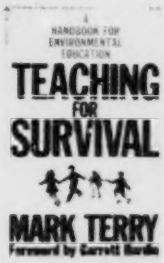
Students are involved in simulated experiments on learning behavior.

THE PLANET MANAGEMENT GAME $12 **J**

This game allows students to work with environmental and economic variables in a small scale biosphere.

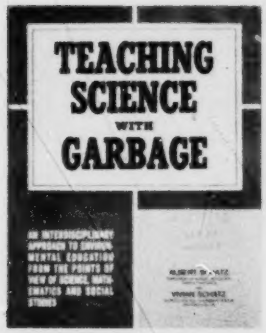
THE POLLUTION GAME $7.50 **J**

This activitiy teaches cooperative measures needed to control pollution problems.



98.
TEACHING FOR SURVIVAL
By Mark Terry
Ballantine Books, Inc., Department CS
36 West 20th Street
New York, New York 10003
$1.25 **Adult**

This paperback presents a way to change in the classroom some basic assumptions of our educational system — assumptions which the author feels may lead ultimately to the destruction of our natural environment. He urges that the tools for change are, and always have been, at hand, if we only learn to recognize them.



99.
TEACHING SCIENCE WITH GARBAGE
Rodale Press
33 East Minor Street
Emmaus, Pennsylvania 18049
$2.95 **P, I, J, S**

The garbage pollution problem is made meaningful by considering what kinds of garbage and how much garbage each student and his family produce, and how it is handled in the community where they live. Although the title of this unit emphasizes science, the approach is interdisciplinary since it also involves mathematics and social studies. The materials needed to do the experiments in this unit are simple, inexpensive, readily available, and familiar. Garbage, soil, aspirin, nails, and steel wool are examples. The unit is ungraded and may be used in one way or another in elementary, junior high, and senior high schools.

100.
ECOLOGY, THE POLLUTION PROBLEM
By Thomas J. Rillo
David C. Cook Publishing Company
Elgin, Illinois 60120
$4.95 **P, I**

This packet contains twenty teaching pictures and a 64-page resource manual with stories, parables, background information, and activities on the importance of air; sources of air, water, and noise pollution; importance of water resources; atomic energy; importance of land resources; endangered wildlife; and possibilities for the future.

101.
GIVE EARTH A CHANCE SERIES
Minnesota Environmental Science Foundation
5400 Glenwood Avenue
Minneapolis, Minnesota 55422
65¢ each $3.25 a set **I, J**
DIRTY AIR
SOUNDS AND SILENCE
PESTICIDES ARE PERILOUS
TRAGEDY IN THE LAUNDROMAT
TROUBLESOME TAILPIPES

These five booklets are suitable for elementary use, and are intended to stimulate discussion and activities related to various forms of pollution. Each booklet begins with a story in which the main characters encounter a pollution problem; and investigation or study to evaluate a problem in the community follows. The stories involve the characters in actual field work, collecting and analyzing data in such studies as air pollution measurement, detergent studies, trash measurement, and the like. The stories serve as a model for actual class activities. Many questions and problems are left unexplored, but are presented to stimulate further investigation.

102.
POLLUTION: PROBLEMS, PROJECTS, AND MATHEMATICAL EXERCISES
Department of Public Instruction
Division of Instructional Services
Wisconsin Hall
126 Langdon Street
Madison, Wisconsin 53702
$2 **J**

This exercise book incorporates environmental themes into mathematics problems involving graphs and percent measurement.

103.
A CURRICULUM ACTIVITIES GUIDE TO WATER POLLUTION AND ENVIRONMENTAL STUDIES
Environmental Protection Agency
Training Grants Branch, Water Quality Office
Washington D. C. 20242
$15 **J, S**

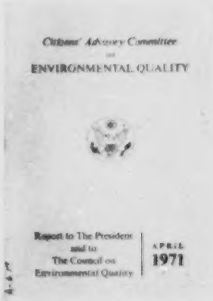
The activities included in this guide were developed by teachers participating in summer workshops and were tested for a full school year. The hydrologic cycle, human activities, ecological perspectives, and social and political factors are examined. The guide is non-sequential, so the teacher may choose the path most appropriate to his class in examining the topic. A solid background in chemistry is recommended.

104.
A LOOK AT OUR ENVIRONMENT: A MIXED MEDIA UNIT
Educational Ventures
209 Court Street
Middletown, Connecticut 06457
SACRIFICE GAME $4.95 **I, J**
LAND USE GAME $1.95 **I, J**
MIKE'S WORLD — YOUR WORLD $.75 **I, J**

These units feature reading and game materials that stimulate reflective thinking and create experiential bases for understanding facts and issues involved in environmental education. Tested in Connecticut, they emphasize the problems of land development and general pollution practices.

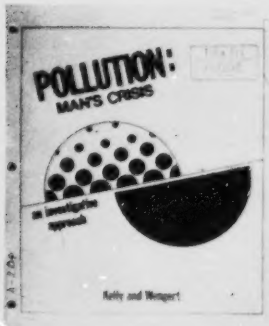
105.
CURRICULUM OVERVIEW FOR DEVELOPING ENVIRONMENTALLY LITERATE CITIZENS
By Charles E. Roth
Liberty Council of Schools
Conservation Education Center
Lincoln, Massachusetts 01773
$1.25 **Adult**

This document explores the total scope of the problem of man's abuse of the natural and man-made environments. The prime purpose of this guide is to give administrators, curriculum specialists, teachers, and interested citizens a statement of essential steps in developing environmentally literate citizens who will be able to make sound decisions and choices as producers, consumers, and voters.



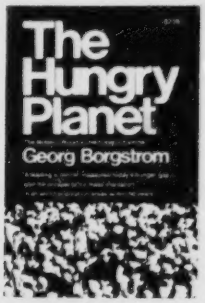
106.
REPORT TO THE PRESIDENT AND TO THE COUNCIL ON ENVIRONMENTAL QUALITY
Citizens' Advisory Committee on Environmental Quality
1700 Pennsylvania Avenue, N.W.
Washington, D. C. 20006
$1.50 **Adult**

A review of governmental actions in various areas of environmental problems, and recommendations for further action, this pamphlet offers a good review of the environmental crisis facing the country.



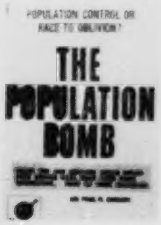
107.
POLLUTION: MAN'S CRISIS
By James Kelly and Harold Wengert
North Dakota Studies
Box 228
Bismarck, North Dakota 58501
$1.40 **I**

After a section on the facts of the pollution crisis come discussions and experiments on the pollution of the lithosphere, atmosphere and hydrosphere. Questions and fill-ins lead the student on to each new topic. The second part has a workbook structure. Content oriented.



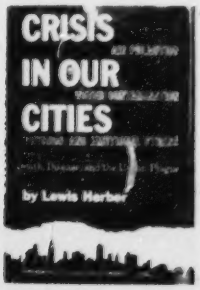
108.
THE HUNGRY PLANET
By Georg Borgstrom
The Macmillan Company
866 Third Avenue
New York, New York 10022
$2.95 **Adult**

An inventory of hunger related to world geography. The book is designed for mature readers.



109.
THE POPULATION BOMB
By Paul R. Ehrlich
Ballantine Books, Department CS
36 West 20th Stret
New York, New York 10003
95¢ **Adult**

Over-population is with us now and may be a cause of major world problems unless it is brought under control. This book tells what can be done, and what is likely to occur.

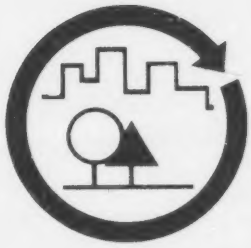


110.
CRISIS IN OUR CITIES
By Lewis Herber
Prentice-Hall
Englewood Cliffs,
New Jersey 07632
$6.95 **Adult**

This book takes a hard look at the effects of the modern metropolis on human health. Many books have been written on the layout, logistics, and architecture of the metropolis, but surprisingly few have dealt with the effects of the metropolis on the human body. This book examines the subtle, long-range effects on public health of persistent nervous tension and the continual exposure of urban residents to small quantities of poisons in air and water.

111.
SCIENCE AND SURVIVAL
By Barry Commoner
Ballantine Books
101 Fifth Avenue
New York, New York 10003
$1.25 **Adult**

This book begins with the blackout — the symbol of technological breakdown — and proceeds to question our headlong rush to create the potential for even greater disaster.

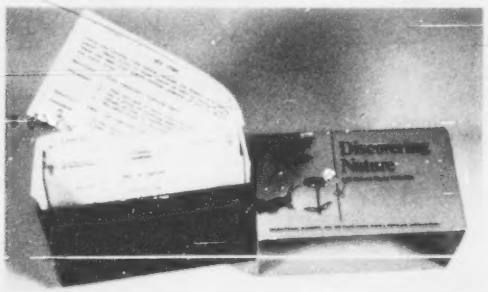


Classroom Aids

NATURE STUDY

112.
DISCOVERING THE OUTDOORS
113.
DISCOVERING PLANTS
114.
DISCOVERING NATURE INDOORS
Edited by Laurence Pringle
The Natural History Press
501 Franklin Avenue
Garden City, New York 11530
$4.95 each **J, S, Adult**

All three hardback books are rich sources of ideas for projects and investigations in the biological sciences. They are collections of some of the most popular science articles that have appeared in Nature and Science, the young peopie's magazine published for the American Museum of Natural History. Illustrated with many clear diagrams and photographs, the books discuss ways of collecting plants and animals and their care.



115.
DISCOVERING NATURE: 135 NATURE STUDY ACTIVITIES
Educational Insights
423 South Hindry Avenue
Inglewood, California 90301
$5.95 **I, J**

This study box contains 135 index cards listing various activities, projects, experiments, and field trips. These projects provide an understanding and awareness of our natural surroundings, and are a good primer for ecology and conservation.

116.
BAKER NATURE STUDY PACKET
By Tunis Baker
Baker Science Packets
650 Concord Drive
Holland, Michigan 49423
$5.95 **P, I, J**

Index cards describe activities with plants and animals. Activities are not arranged according to grade but seasonally, according to the months of the year.

117.
NATURE RECREATION
By William Gould Vinal
Dover Publications
180 Varick Street
New York, New York 10014
$3 **Adult**

In this book, the use of less formal language than one might expect in a textbook for leaders stems from an anxiety to retain a viewpoint and to arouse enthusiasm for the nature-lore movement. The book is intended for the uninitiated as well as for students in colleges of education and teachers. Included are nature activities in the home, in the community, on trips, trails, and in camps. The second half of the book is devoted to leadership and offers many suggestions as to the qualities of good leaders.

118.
THE NEW FIELD BOOK OF ACTIVITIES AND HOBBIES
By William Hillcourt
G. P. Putnam and Sons
210 Madison Avenue
New York, New York 10016
$5.95 **J, S, Adult**

This dense accumulation of facts on animals and plants, the winds and seas, the land and the forests results in stimulating the individual and providing the background information needed to investigate natural phenomena.

119.
BIRDS
Encyclopedia Britannica Educational Corporation
425 North Michigan Avenue
Chicago, Illinois 60611
$46 **J, S**

This set, a National Geographic Society production, contains four records and corresponding filmstrips in full color. Narration is found on the record jacket. Titles are The Way of a Bird, Bird Watching with a Camera, The Struggle for Survival, and The Mystery of Migration.

120.
A BOOK OF NATURE ACTIVITIES
By John F. Gardner
Interstate Printers and Publishers
19-27 North Jackson Street
Danville, Illinois 61832
50¢ **I, J**

Suggestions and descriptions pertaining to local nature activities are discussed on an intermediate level. These include how to help birds with their nest materials, making leaf prints, insect zoos, making leaf people, exploring a pond, and more.

121.
NATURE STUDY FOR CONSERVATION
By John W. Brainerd
The Macmillan Company
866 Third Avenue
New York, New York 10022
$4.95 **Adult**

As the introduction promises, "This is a start-anywhere book, a bit like a meadow or a dictionary." Any of its three parts is valuable by itself or with the others. Part one deals briefly with ecological thought basic to conservation, with references to more comprehensive books. The second part, on techniques, forms the bulk of the book and stresses methods of observing, analyzing, recording, and filing data on environmental components of natural systems. Emphasis is on what an individual can find out about nature with little or no fancy equipment. Computerized data handling and other sophisticated techniques find no place here. Responsibility is the subject of the third part, which gives attention to methods of protecting land, with a special chapter on wise use of campus and schoolgrounds for environmental education. This book can help administrators to work together with teachers and students to create a better environment.

122.
ENVIRONMENTAL EDUCATION FOR INTERMEDIATE GRADES: A TEACHERS' MANUAL

123.
ENVIRONMENTAL EDUCATION FOR JUNIOR HIGH GRADES: A TEACHERS' MANUAL
Michigan Department of Natural Resources
Lansing, Michigan 48933
$1.45 Intermediate
$1.95 Junior **Adult**

Teaching suggestions are grouped in such categories as geology; soil conservation and land use; trees, woodlots, and forests; and wildlife and fishes. Listed under each heading are attitudes and understandings to develop, topics for discussion, and many suggested activities.

124.
NATURE IN THE CITY
By John Rublowsky
Basic Books
404 Park Avenue South
New York, New York 10016
$4.95 **Adult**

Nature? In the city? You just have to know how to look. John Rublowsky has written a book for teachers, alerting them to the flourishing natural life which has found the key to survival in a man-made environment. The changes and history of the birds, mammals, trees and flowers of the city are discussed, and insightful comments hold the reader's interest. With this as background, the city can gain new meaning for teachers and students.

125.
A READER'S GUIDE TO NATURE-ORIENTED ACTIVITIES
By Betty Van Der Smissen and Oswald H. Goering
Iowa State University Press
Ames, Iowa 50010
$3.95 **Adult**

A list of activities a nature leader can use for adults as well as children. Organization is discussed as well as program development. The author gives tips on nature crafts (for instance, how to wood-carve, make whistles, baskets); nature games, projects and hobbies; and outdoor living skills including firecraft, ropecraft, toolcraft and cookery.

126.
LEARNING ABOUT NATURE THROUGH INDOOR GARDENING

127.
LEARNING ABOUT NATURE THROUGH GAMES

128.
LEARNING ABOUT NATURE THROUGH PETS
By Virginia W. Musselman
The Stackpole Company
Cameron and Kelker Streets
Harrisburg, Pennsylvania 17105
$3.95 each **I, J**

Each of the books in this series contains a wealth of practical, activity-oriented information. The book on indoor gardening includes a reference guide to familiar plants complete with common and botanical names; simple definitions for the 35 most frequently used indoor gardening terms; information on plant parts, life cycles, diseases and pests; and care for many varieties of indoor plants. The book on games is a vast collection of simple, creative games anyone can play with a minimum of equipment. Dogs, cats, hamsters, gerbils, guinea pigs, mice, rabbits, birds, fish, frogs, and salamanders are all discussed in the book on pets. Tips and facts on handling, feeding, housing, observing, breeding and first aid are dealt with.

Reference Materials

OUTDOOR EDUCATION

129.
RESIDENT OUTDOOR EDUCATION: POLICIES, PROCEDURES, AND PLANNING
By Eugene Knight
Worthington City Schools
Outdoor Education Department
600 West Dublin-Granville Road
Worthington, Ohio 43085
$2

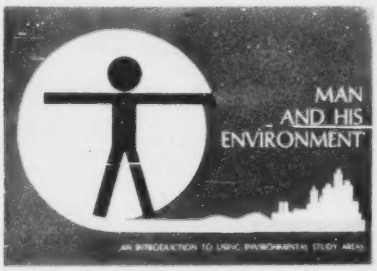
A technical, factual aid on how to set up a resident outdoor education program in the school curriculum. Justification, site choice, financial procedures, scheduling, pre- and post-session activities as well as resident outdoor activities are included. Practical ideas on resident outdoor study techniques are plentiful.

130.
BASIC STEPS IN PLANNING RESIDENT OUTDOOR EDUCATION PROGRAMS
Leasco Information Services
P. O. Drawer O
Bethesda, Maryland 20014
$2.95 hard copy

This document, developed by the Nassau County (New York) Board of Cooperative Educational Services, is intended to serve as a planning guide for teachers who become involved for the first time in the resident phase of an outdoor education program. It answers the question of where and when to initiate the planning process and takes the reader through that process step by step.

131.
ADVENTURES IN OUTDOOR EDUCATION AND INTERRACIAL UNDERSTANDING
Cincinnati Public Schools
230 East Ninth Avenue
Cincinnati, Ohio 45202
Free (supplies are limited)

Both a guide to the development of an outdoor resident study experience, and a summary of activities for interracial understanding to use during the study session, this book provides a thoughtful approach to integrating a natural environment and social problems. Activities in math, arts, science, social studies, and language arts are suggested.



132.
MAN AND HIS ENVIRONMENT
Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402
$1.75 **Specify catalog number 0-389-991**

This guide by the National Park Service tells what outdoor environmental education is all about. Included is comprehensive information on how to establish an environmental study area similar to those organized by the National Park System. Following the introductory sections on educational philosophy and objectives are suggestions relating to practical aspects of an environmental study project: how to select a site, contacting the key people, educational feasibility study, presenting the program to the local educational community, teacher education programs, and others. The book also includes suggestions for lessons and activities in art, communications, mathematics, science, and social studies. The lessons follow the conceptual or "strand" approach to the environment, with the format: patterns, adaptation, change, interdependence, and diversity. Appendices include examples of the strand approach and a glossary of environmental terms. This guidebook can be used by teachers having little or no ecological training.

133.
SEVEN STEPS FOR DEVELOPING AN OUTDOOR SCHOOL AREA FOR TEACHING SCIENCE AND CONSERVATION
By Phyllis S. Busch
Leasco Information Services
P. O. Drawer O
Bethesda, Maryland 20014
$1.60 **Specify ERIC microfiche ED033834**

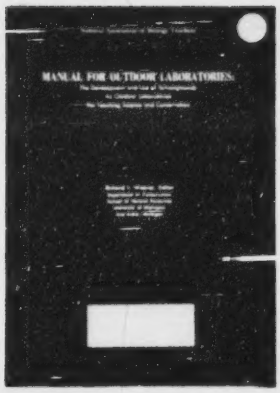
Presented are seven steps to use in developing an educational program focused on the outdoor environment. A map of an area likely to be found outside almost any school in any community is provided, and 19 teaching stations are indicated along with a description of each. The descriptive material is followed by suggested teaching possibilities for the mapped outdoor area. A section is included for each grade level from kindergarten through eighth. The material for each level consists of problems to be investigated, science and conservation concepts, and discussion questions. Samples of discovery guides as techniques for outdoor investigation are also presented, followed by a list of selected references.

134.
TEACHING SOIL AND WATER CONSERVATION
Superintendent of Documents
U. S. Government Printing Office
Washington D. C. 20402
25¢ **Specify catalog number 0-727-778**

This classroom and field guide by the U.S. Soil Conservation Service provides straight investigations on the relationship of soil and water, and the need for good conservation practices.

135.
OUTDOOR CLASSROOMS ON SCHOOOL SITES
Superintendent of Documents
U.S. Government Printing Office
Washington D. C. 20402
25¢ **Specify catalog number 0-100-1458**

This sourcebook by the Soil Conservation Service is basically a pictorial essay giving the diverse functions of land labs and ideas for their use. It is intended as a source of ideas for developing and using outdoor classrooms on school sites of any size wherever they are located. The two center pages list compact information and guidelines dealing with the details of setting up a land lab, suggesting committees needed, student participation, land inventory items, and a list of contacts for additional help.



136.
MANUAL FOR OUTDOOR LABORATORIES: THE DEVELOPMENT AND USE OF SCHOOLGROUNDS AS OUTDOOR LABORATORIES FOR TEACHING SCIENCE AND CONSERVATION
Edited by Richard L. Weaver
Interstate Printers and Publishers
19-27 North Jackson Street
Danville, Illinois 61832
$1.25

A good place to start looking for information about land laboratories is this pamphlet produced by the National Association of Biology Teachers. A collection of articles includes some background ideas on what may be included in a land lab, several examples of land lab operational use, techniques to encourage student interest, and a section on teacher preparation. It describes the variety of land laboratories that can be developed and the myriad uses for them.

137.
A CONSERVATION EDUCATION AREA TO ENRICH YOUR SCHOOL
By Joseph J. Shomon and Robert F. Holmes
The Conservationist, Reprint 13
New York Department of Environmental Conservation
Albany, New York 12201
25¢

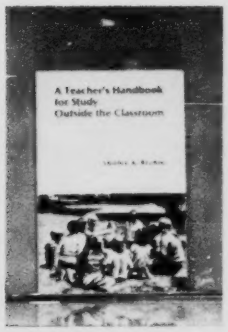
Delineating the importance of choice of site, planned development, good administration, and continued maintenance, this article suggests features that can be developed on the school site and lists sources of information regarding what to teach in the area.

138.
PLANNING A NATURE CENTER
By Byron L. Ashbaugh
National Audubon Society
Nature Centers Division
950 Third Avenue
New York, New York 10022
$2

A more involved guide to initiating a community nature center, this booklet is a comprehensive collection of procedures and ideas. It covers initial considerations, organizing for action, planning the program, staffing, budget, fund raising, and technical guidance.

139.
WILDLIFE HABITAT IMPROVEMENT
By Joseph J. Shomon and Byron L. Ashbaugh
National Audubon Society
Nature Centers Division
950 Third Avenue
New York, New York 10022
$2.50

A more specialized guide for encouraging animals to use sites, whether suburban homes or school lands. Useful in the maintenance and planning of a site; offers parameters and practices that normally enhance conditions for wildlife. Readable and pertinent.



140.
A TEACHER'S HANDBOOK FOR STUDY OUTSIDE THE CLASSROOM
By Shirley A. Brehm
Charles E. Merrill Publishing Company
1300 Alum Creek Drive
Columbus, Ohio 43209
$1.95

The major purpose of this book is to help teachers use resources out-of-doors. The book is not, however, a series of recipes for taking field trips, but an aid to planning. It gives a checklist of preparations and follow-up activities essential to integrated, continuous planning for good teaching. It offers suggestions on utilizing the possibilities for meaningful learning that are waiting outside the classroom.

141.
OUTDOOR EDUCATION
By Charles L. Mand
Charles E. Merrill Publishing Company
1300 Alum Creek Drive
Columbus, Ohio 43209
$2.95

Expounding outdoor education as a method of teaching, using the natural environment as a living laboratory, this book provides a brief historical sketch; activities for science, art, physical education; and plans for resident outdoor education programs.

142.
TIPS AND TRICKS IN OUTDOOR EDUCATION
By Malcolm D. Swan
Interstate Printers and Publishers
19-27 North Jackson Street
Danville, Illinois 61832
$3.95

A collection of activities in the out-of-doors; for example, animal studies, awareness and creative expression, community resources, geology and soils, mapping, nature arts and crafts, plants, water, and weather. The manual includes tips on conducting the experiences.

143.
OUTDOOR ACTIVITIES FOR ENVIRONMENTAL STUDIES
By Clifford E. Knapp
Instructor Publications
P. O. Box 6099
Duluth, Minnesota 55806
$1.35

This book is a compilation of field tested outdoor activities and basic projects for small group or individualized study in monitoring certain aspects of the environment. The experiences involve a combination of physical and mental skills. Most of the activities require the use of inexpensive, student-made instruments and accessories. Instructions and drawings for the construction of these measuring devices accompany each lesson. The projects are general in nature and may be used in any geographic location throughout the school year.

144.
FIELD TRIPS: ECOLOGY FOR YOUTH LEADERS
By Janet Nickelsburg
Burgess Publishing Company
426 South Sixth Street
Minneapolis, Minnesota 55415
$3

Brief descriptions of field trips to various ecological communities including a marsh, banks of a stream, waters of a quiet stream, forest succession, and the like. A section of background information is also included covering such areas as the biome and life zones; associations, habitats and niches; geomorphology of an area; microclimates; and others.

145.
INTEGRATING CONSERVATION AND OUTDOOR EDUCATION INTO THE CURRICULUM
By Wiliam B. Stapp
Burgess Publishing Company
426 South Sixth Street
Minneapolis, Minnesota 55415
$2

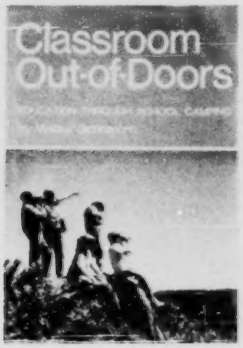
A step-by-step summary of the development, implementation, and results of the outdoor and conservation education program in Ann Arbor, Michigan.

146.
OUTDOOR EDUCATION: A BOOK OF READINGS
Compiled by Donald R. Hammerman and William M. Hammerman
Burgess Publishing Company
426 South Sixth Street
Minneapolis, Minnesota 55415
$7.50

This timely collection of readings reflects the perception of many leaders concerning the nature and value of outdoor education.

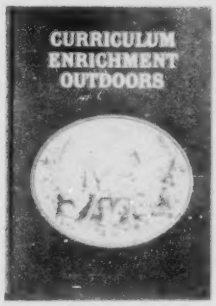
147.
TEACHING IN THE OUTDOORS
By Donald R. Hammerman and William M. Hammerman
Burgess Publishing Company
426 South Sixth Street
Minneapolis, Minnesota 55415
$2.95

This book will aid in learning and understanding those aspects of the basic school curriculum that exist in the out-of-doors, for all subject matter areas at all grade levels. In scope, it is not intended to be an exhaustive coverage of the field or a collection of programs executed across the country. It is rather a brief and concise statement of the authors' philosophy, derived from their personal experiences as professional outdoor educators.



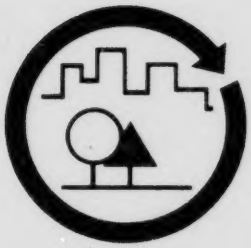
148.
CLASSROOM OUT-OF-DOORS
By Wilbur Schramm
Sequoia Press/Publishers
300 West Kalamazoo Avenue
Kalamazoo, Michigan 49006
$4.95

Classroom Out-of-Doors takes you to one of the largest and best outdoor education programs in the nation: the San Diego County Camp Commission group of three outdoor education centers in Southern California. With tape recorder and camera in hand, the author tells about what happens at the centers, and how to make it happen elsewhere, punctuating his report with revealing conversations with the youngsters and effective photographs.



149.
CURRICULUM ENRICHMENT OUTDOORS
Harper and Row, Publishers
2500 Crawford Avenue
Evanston, Illinois 60201
$3.50

Containing more than 350 suggestions for activities, this book offers tips for teachers initiating outdoor education, additional help and guidance for those teachers who have already discovered outdoor education, and enrichment of many school curricula through an interdisciplinary approach. Most of the suggestions for activities are intentionally brief to allow the teacher to follow the direction he wishes and to use his own ideas.



Reference Materials
PERIODICALS

150.
AUDUBON
National Audubon Society
950 Third Avenue
New York, New York 10002
Bimonthly **Subscription $10 per year, Single copy $2**

The magazine of the National Audubon Society is slick and colorful. Each issue contains articles on various aspects of ecology and a good section on national environmental issues and problems. Photography is outstanding.

151.
AUDUBON LEADER
National Audubon Society
950 Third Avenue
New York, New York 10002
Twice monthly **Free**

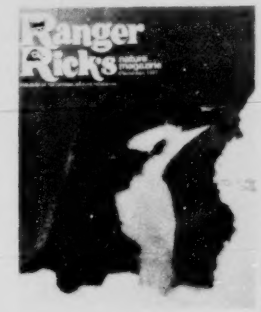
A newsletter for leaders of environmental groups. As leaders, teachers may be eligible to receive it, or may obtain it from their local Audubon chapter.

152.
AUDUBON VIEWS
Ohio Audubon Council
4036 Cypress Road N. E.
Canton, Ohio 44705
Quarterly **Free**

A publication of the Ohio Audubon Council, this newsletter's scope is the state of Ohio and its pages discuss environmental issues of vital concern to Ohioans.

153.
REPORT OF CENTRAL MIDWEST REPRESENTATIVE, NATIONAL AUDUBON SOCIETY
National Audubon Society
Central Midwest Office
1020 East 20th Street
Owensboro, Kentucky 42301
Approximately twice yearly **Free**

This newsletter for Audubon chapters in five midwestern states is an excellent source of detailed, current environmental information in the Midwest. A good selection, political action and notations of where various representatives stand on environmental issues make this newsletter a useful tool for getting into the action.



154.
RANGER RICK'S NATURE MAGAZINE
National Wildlife Federation
1412 16th Street N. W.
Washington D.C. 20036
Monthly October-May **$6 per year**

A colorful, well written children's magazine dedicated to nature and conservation. It is written for the intermediate level but can be used for any age. Adults like it.

155.
NATIONAL WILDLIFE
National Wildlife Federation
1412 16th Street N. W.
Washington D.C. 20036
Bimonthly **$5 per year**

The official publication of the National Wildlife Federation contains excellent color photographs and articles about nature and the environment. Each issue has a wildlife sketchbook section, Washington scene report, a book service, and much more.

156.
INTERNATIONAL WILDLIFE is also available from the National Wildlife Federation, at **$6.50 for six issues.**

157.
CONSERVATION NEWS
National Wildlife Federation
1412 16th Street N. W.
Washington D. C. 20036
Twice monthly **Free**

An excellent newsletter concerned with current conservation news. Many articles deal with legislative bills and action.

158.
CONSERVATION REPORT, a bimonthly newsletter dealing solely with government action concerning conservation, is also available free from the National Wildlife Federation. Both newsletters are made possible by contributions received for wildlife conservation stamps.

159.
JOURNAL OF OUTDOOR EDUCATION
Box 299
Oregon, Illinois 61061
Quarterly **$2 per year**

A "little magazine" devoted to presenting contributors' views and experiences in outdoor education.

160.
JOURNAL OF ENVIRONMENTAL EDUCATION
Dembar Educational Research Services
Box 1148
Madison, Wisconsin 53701
Quarterly **$7.50 per year, $2 single copy**

This new publication has as its purpose the dissemination of a pioneer research and interpretation in environmental education and related fields.

161.
SENSOR SHEET
Environment Studies
Box 1559
Boulder, Colorado 80302
Quarterly **Free**

A thought provoking newsletter for teachers.

162.
NATURE STUDY
American Nature Study Society
R. D. 1
Homer, New York 13077
Quarterly **Membership $5**

One of the older publications in the field of environmental education, this journal carries essays, teaching tips, poems, and all kinds of miscellanea of use to people involved in environmental education.

163.
TEACHERS' ENVIRONMENTAL ENRICHMENT MATERIALS
T. W. Denison and Company
5100 West 82nd Street
Minneapolis, Minnesota 55432
Nine issues per year **$12.50**

A new publication (1972) designed to bring to teachers of all grade levels activities involving students in the natural environment. An evaluation form is included with the activities to provide the editors with feed-back on the effectiveness of the activities. Each issue stresses a different concept of ecology.

164.
SCIENCE AND CHILDREN
National Science Teachers Association
1201 16th Street N. W.
Washington D. C. 20036
Monthly September-December, February-May **$8 per year**

Science and ecology can be fascinating for elementary students, especially if some of the good ideas presented in this magazine are utilized.

165.
ENVIRONMENT AND BEHAVIOR
Sage Publications Inc.
275 South Beverly Drive
Beverly Hills, California 90212
Quarterly **$7 per year**

A new interdisciplinary journal concerned with the study, design, and control of the physical environment and its interaction with human behavioral systems.

166.
THE CURIOUS NATURALIST
Massachusetts Audubon Society
Lincoln, Massachusetts 01773
Monthly **$2.50 per year**

Packed with activities for the intermediate grades, each issue discusses various aspects of ecology and environment, providing the youngster with background information and things to do.

167.
OUTLOOK
Mountain View Center for Environmental Education
University of Colorado
1511 University Avenue
Boulder, Colorado 80302
Three times yearly **$2 per year**

A journal of writings about the broad aspects of environmental education, this publication is concerned not only with education about the environment, but also environments for education. Many articles are written by people involved in non-traditional education.

168.
THE BIOSPHERE
Scientific American
415 Madison Avenue
New York, New York 10017
Reprint **$1.50**

The September, 1970, issue of Scientific American, subtitled The Biosphere, is devoted to environmental problems, and could be a valuable sourcebook.

Other periodicals worth investigating:

169.
OHIO REPORT
Ohio Agricultural Research and Development Center
Wooster, Ohio
Bimonthly **Free**

170.
OHIO WOODLANDS
Ohio Forestry Association
The Neil House
Columbus, Ohio 43215
Quarterly **$3 per year**

171.
Each issue of Ohio Woodlands includes **CONSERVATION IN ACTION**, an insert.

172.
SIERRA CLUB BULLETIN
Sierra Club
1050 Mills Tower
San Francisco, California 94104
Monthly **$5 per year**

173.
DEFENDERS OF WILDLIFE NEWS
Defenders of Wildlife
2000 N Street N. W.
Washington D. C. 20036
Bimonthly **$5 per year**

174.
NATURAL HISTORY
American Museum of Natural History
Central Park West at 79th Street
New York, New York 10024
Monthly October-May
Bimonthly June-September **$8 per year**

175.
NATURE CONSERVANCY NEWS
1800 North Kent Street
Arlington, Virginia 22209
Quarterly **$5 per year**

176.
NATIONAL PARKS MAGAZINE
1701 18th Street N. W.
Washington D. C. 20009
Monthly **$5 per year**

177.
THE CONSERVATIONIST
New York Department of Environmental Conservation
Albany, New York 12201
Bimonthly **$2 per year**

178.
PARKS AND RECRECATION
National Recreation and Parks Association
1700 Pennsylvania Avenue N.W.
Washington D. C. 20006
Monthly **$7.50 per year**

179.
THE ECOLOGIST
Ecosystems Ltd.
11 Mansfield Street
Portland Place
London, England
Monthly **$4 per year**

180.
ECOLOGY TODAY
Ecological Dimensions Inc.
48 Main Street
Mystic, Connecticut 06388
Monthly **$6 per year**

181.
ENVIRONMENT
Committee for Environmental Information
438 North Skinker Boulevard
St. Louis, Missouri 63130
10 times yearly **$8.50 per year**

182.
ENVIRONMENTAL QUALITY MAGAZINE
6464 Canoga Avenue
Woodland Hills, California 91364
Bimonthly **$5.50 per year**

183.
SMEAC: ENVIRONMENTAL EDUCATION NEWSLETTER

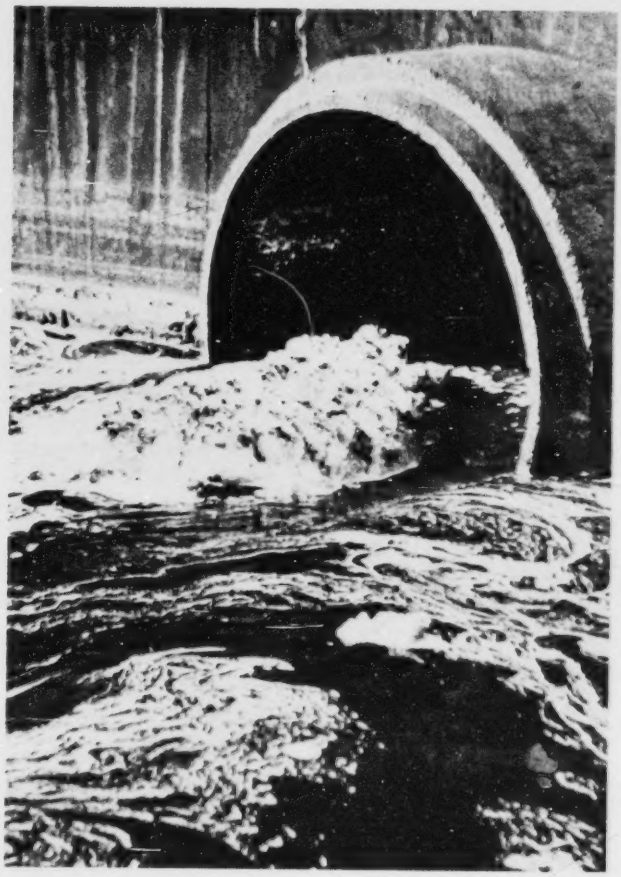
ERIC/SMEAC Information Analysis Center for Science, Mathematics, and Environmental Education
400 Lincoln Tower
Ohio State University
Columbus, Ohio 43210
Eight times yearly **Free**

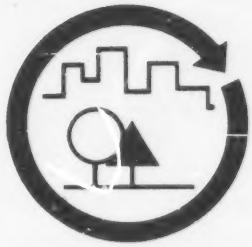
184.
ENVIRONMENTAL EDUCATION NEWS
Michigan Department of Natural Resources
Information and Education Division
Lansing, Michigan 48926
Monthly **Free**

185.
ECOLOG
Minnesota Environmental Science Foundation
5400 Glenwood Avenue
Minneapolis, Minnesota 55422
Monthly **Free**

186.
EARTH I CARE
Earth Awareness Foundation
350 Grove Street
Somerville, New Jersey 09976
Monthly **Free**

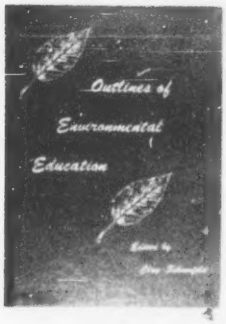
187.
ETC: OUTDOOR EDUCATION NEWSLETTER
Worthington City Schools
Outdoor Education Department
600 West Dublin-Granville Road
Worthington, Ohio 43085
Three times yearly **$1 per year**





Reference Materials

LOOKING FURTHER



188.
OUTLINES OF ENVIRONMENTAL EDUCATION
By Clay Schoenfeld
Dembar Educational Research Services
Box 1148
Madison, Wisconsin 53701
$9.16

This collection of articles on environmental education treats six broad areas: The Environmental Decade, Defining Environmental Education, The Schools Encompass Environmental Education, Environmental Studies Come to the Campus, New Learning Laboratories in Field and Factory, and Adult Education for Ecological Action. A good resource book for the serious environmentalist.

189.
ENVIRONMENTAL EDUCATION: EDUCATION THAT CANNOT WAIT
Department of Health, Education, and Welfare
Office of Education
Washington, D. C. 20202
50¢

A pamphlet in three sections. The first concerns environmental problems and the objectives of environmental education, under headings of Overwhelming Technology, American Consumerism, and Environmental Education Values and Principles. Part two discusses the role of environmental education in chapters on Educational Expectations, Environmental Encounters, and the Role of State and Federal Agencies. The concluding section concerns a national commitment to environmental education.

190.
ENVIRONMENTAL EDUCATION
By Martha T. Henderson
Social Science Education Consortium
Boulder, Colorado 80302
$1.60 **Specify publication 136**

This booklet lists and comments on 25 environmentally oriented projects and programs under four major categories: projects encouraging individual inquiry; programs stressing interaction between man and his environment; programs emphasizing field work; and programs in law, politics, and economics (values and ethics).

191.
THE SCHOOLS AND THE ENVIRONMENT
Institute for Development of Educational Activities
Information and Services Division
P. O. Box 446
Melbourne, Florida 32901
Free

A report of a national seminar on the schools and the environment, this is a good overall view of the relationship of the environment and the school. Containing a sample curriculum, lists of audio-visual aids, and books, this guide also includes consensus statements about mandates, Earth Day, change techniques. Lively and readable introduction to environmental education.

192.
WHAT KIND OF ENVIRONMENT WILL OUR CHILDREN HAVE?
American Association of Colleges for Teacher Education
One Du Pont Circle N. W.
Washington, D. C. 20036
Free

This book contains the proceedings of a conference of Western Hemisphere educators who are involved in teacher education. Included are a call to action and realistic approaches with some sample program ideas.

193.
ENVIRONMENT AND THE SCHOOLS
National School Public Relations Association
1201 16th Street N. W.
Washington, D. C. 20036
$4

A series of articles dealing with the theory of environmental education and a sampling of environmental education programs across the country.

194.
PROCESSES FOR A QUALITY ENVIRONMENT
Edited by Robert S. Cook and George T. O'Hearn
Office of Community Outreach
University of Wisconsin
Green Bay, Wisconsin 54302
$2.50

Philosophical positions and operational programs are outlined in this report on the National Conference on Environmental Education (December, 1970). A digest of environmental education activities, this gives a good overview of the field.

195.
PLACES FOR ENVIRONMENTAL EDUCATION
Education Facilities Laboratory
477 Madison Avenue
New York, New York 10022
Single copies free **Multiple copies 25¢ each**

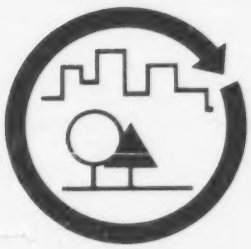
This is the best summation yet of what environmental education is all about. Besides describing facilities for environmental education, it gives a definition of what environmental education is and is not.

196.
ENVIRONMENTAL EDUCATION BIBLIOGRAPHY
Drumlin Farms
Lincoln, Massachusetts 01773
Free

This bibliography, compiled by the Massachusetts Audubon Society for the U. S. Office of Education, lists filmstrips, student reading materials, curriculum programs and graphics covering a wide range of environmental subjects. The bibliography is divided into three learning levels: pre-school to grade three, fourth through sixth grades, and seventh through ninth. The entries are annotated to aid selection.

197.
A BIBLIOGRAPHY OF CLASSIC AND CURRENT MATERIALS IN ECOLOGY AND ENVIRONMENT
By Sheila J. Shaeffer
Center for Environmental Communications and Education Studies
University of Wisconsin
602 State Street
Madison, Wisconsin 53706
50¢

An annotated list of books, continuously updated, broken down into the following categories, among others: Ecology-Natural History, Urban Environment, American Scene, Pesticides and Pollution, Conservation.



New information pertaining to education in general and environmental education in particular becomes available every day. Government projects, individual school endeavors, doctoral dissertations, articles in the education journals — these and many other sources contribute to the mass of material. It would be nearly impossible for an individual, by his own efforts, to keep up with new developments in the field.
The federal government has recognized this problem and has set up a system to help classify and disseminate this information to interested educators. Since June, 1964, the United States Office of Education has maintained the Educational Resources Information Center (ERIC), a national information system which disseminates educational research results. Three parts make up this system: ERIC, CIJE (Current Index to Journals in Education), and RIE (Research in Education).

198.
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
United States Office of Education
400 Maryland Avenue S. W.
Washington, D. C. 20202

ERIC is a nationwide information network for acquiring, selecting, abstracting, indexing, storing, retrieving, and disseminating the most significant and timely education research reports. It consists of a coordinating staff in Washington, D. C. and 19 clearinghouses located at universities or with professional organizations across the country. These clearinghouses, each responsible for a particular educational area, are an integral part of the ERIC system.

199.
CURRENT INDEX TO JOURNALS IN EDUCATION (CIJE)
CCM Information Corporation
866 Third Avenue
New York, New York 10022
Years subscription (12 issues) $39
Semiannual and annual cumulative volumes $40
Monthly, semiannual, and annual $74

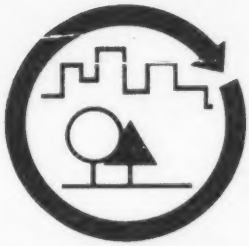
CIJE represents a unique publishing venture. It provides detailed indexing for articles in over 500 education-related journals. It is the companion piece to RIE (Research in Education) and is published monthly, helping to make current educational information available directly to those who need it, and aiding libraries and educational organizations to provide more effective services to their users.

200.
RESEARCH IN EDUCATION (RIE)
Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402
Year's subscription $21

RIE is published monthly by ERIC to make possible the early identification and acquisition of reports of interest to the educational community. Indexing those educational papers not presented in journals, RIE includes government reports of ESEA projects, university papers, dissertations, miscellaneous articles, supplementary education center activities, and community projects.
Full texts of all resources indexed in CIJE and RIE may be obtained from within the ERIC system, either in microfiche format (four-by-six-inch sheet of microfilm on which 70 pages of text are reproduced) or a duplicated version of the original documents:
ERIC Document Reproduction Service
Leasco Information Products
P. O. Drawer O
Bethesda, Maryland 20014
65¢ per title microfiche
$3.29 per 100 pages hard copy

201.
THESAURUS OF ERIC DESCRIPTORS
CCM Information Corporation
866 Third Avenue
New York, New York 10022
$8.95

The Thesaurus is a source book describing the classification system used by ERIC. It will indicate the route by which the information needed can best be gleaned from the vast sources.



Indexes

TITLE INDEX

Please note that all references are to consecutively numbered entries, not pages

58 A Child's Garden: A Guide for Parents and Teachers
104 A Look at Our Environment
35 Acclimatization: A Sensory Approach to Ecological Envolvement
6 Adventure in Environment
131 Adventures in Outdoor Education and Interracial Understanding
56 Air Above, the Ground Below, The
150 Audubon
151 Audubon Leader
152 Audubon Views
116 Baker Nature Study Packet
130 Basic Steps in Planning Resident Outdoor Education Programs
67 Benziger Ecology Series
197 Bibliography of Classic and Current Materials in Ecology and Environment
168 Biosphere, The
119 Birds
120 Book of Nature Activities, A
92 Can I Breathe the Air?
68 Circle of the World
148 Classroom Out-of-Doors
22 Clean the Scene
26 Clean-up
54 Community of Living Things
17 Community Resources for the Durham Child Development Center
137 Conservation Education Area to Enrich Your School, A
171 Conservation in Action
158 Conservation Report
157 Conservation News
177 Conservationist, The
65 Contemporary Social Science Curriculum
89 Control of Domestic Rats and Mice
30 Crack in the Pavement, A
110 Crisis in Our Cities
166 Curious Naturalist, The
199 Current Index to Journals in Education (CIJE)
103 Curriculum Activities Guide to Water Pollution and Environmental Studies, A
149 Curriculum Enrichment Outdoors
105 Curriculum Overview for Developing Environmentally Literate Citizens
173 Defenders of Wildlife News
25 Dilemma!
77 Dimensions of Change
101 Dirty Air
115 Discovering Nature: 135 Nature Study Activities
114 Discovering Nature Indoors
113 Discovering Plants
112 Discovering the Outdoors
186 Earth I Care
86 Earth Island: An Introduction to Ecology in Action
12 Ecolab: Learning Concepts
185 Ecolog
85 Ecological Science Series
179 Ecologist, The
75 Ecology (LIFE Nature Library)
40 Ecology
48 Ecology of the Forest, The
49 Ecology of the Sea, The
27 Ecology: The Game of Man and Nature
100 Ecology, the Pollution Problem
74 Ecology: The Study of Environment
180 Ecology Today
62 Education for Survival: Social Studies and Science Curriculum Guide
198 Educational Resources Information Center (ERIC)
71 Elementary Science Study
181 Environment
165 Environment and Behavior
193 Environment and the Schools
19 Environmental Action: No Time to Waste
38 Environmental Awareness
34 Environmental Awareness, An Action Approach
190 Environmental Education
11 Environmental Education Activities
196 Environmental Education Bibliography
189 Environmental Education: Education that Cannot Wait
122 Environmental Education for Intermediate Grades
123 Environmental Education for Junior High Grades
24 Environmental Education Instructional Activities
184 Environmental Education News
55 Environmental Education Objectives and Field Activities
70 Environmental Education Resource Guide
57 Environmental Education Studies
52 Environmental Instruction
53 Environmental Investigation Units
94 Environmental Pollution
182 Environmental Quality Magazine
90 Environmental Rat Control
10 Environmental Studies Packets
187 ETC: Outdoor Education Newsletter
29 Everything Changes
39 Examining Your Environment
37 Experiences with Living Things
46 Extinction — The Game of Ecology
144 Field Trips: Ecology for Youth Leaders
88 Focus on Pollution
80 4-H Publications
47 Freshwater Ecology
64 Geography in an Urban Age: Habitat and Resources
101 Give Earth a Chance Series
79 Government Publications
61 Guide to Environmental Education: Conservation of Natural Resources
69 Guide to the Teaching of Human Ecology, A
16 Housing in the Urban Environment
42 How and Why Wonder Book of Ecology, The
108 Hungry Planet, The
5 I Wonder Why Readers
50 Instructor Ecology Series
145 Integrating Conservation and Outdoor Education into the Curriculum
156 International Wildlife
14 Introductory Unit to the Urban Environment
73 Investigations in Ecology

160 Journal of Environmental Education
159 Journal of Outdoor Education
127 Learning about Nature through Games
126 Learning about Nature through Indoor Gardening
128 Learning about Nature through Pets
15 Learning to Get Around
97 Life Science Investigation Series
66 Life Science Series
132 Man and His Environment
96 Man and the Environment
28 Man in His Environment
81 Man's Habitat — The City
136 Manual for Outdoor Laboratories: The Development and Use of Schoolgrounds as Outdoor Laboratories for Teaching Science and Conservation
97 Mouse in the Maze, The
2 My Book of Things to See and Do in the Out-of-Doors
31 My Senses and Me
176 National Parks Magazine
155 National Wildlife
174 Natural History
45 Natural Resources Concept Pack
175 Nature Conservancy News
124 Nature in the City
117 Nature Recreation
162 Nature Study
121 Nature Study for Conservation
118 New Field Book of Activities and Hobbies, The
23 Observing Our Environment through Our Senses
169 Ohio Report
170 Ohio Woodlands
21 Operation New York
3 Organic Classroom, The
91 Our Environment: Let's Work Together to Change This
32 Our Environment II: Sound and Noise
33 Our Environment III: Aesthetics
72 Our Environment V: Freshwater Communities, Atmosphere, Saltwater Communities
13 Our Man-Made Environment
87 Our Polluted World
143 Outdoor Activities for Environmental Studies
135 Outdoor Classrooms on School Sites
141 Outdoor Education
146 Outdoor Education: A Book of Readings
188 Outlines of Environmental Education
167 Outlook
178 Parks and Recreation
101 Pesticides Are Perilous
1 Place to Live, A
195 Places for Environmental Education
97 Planet Management Game, The
138 Planning a Nature Center
97 Pollution Game, The
83 Pollution of the Atmosphere
84 Pollution of the Waters
107 Pollution: Man's Crisis
93 Pollution: Our World in Crisis
102 Pollution: Problems, Projects, and Mathematical Exercises
109 Population Bomb, The
194 Processes for a Quality Environment
51 Project ICE: A Supplementary Program for Environmental Education
154 Ranger Rick's Nature Magazine
125 Reader's Guide to Nature-Oriented Activities, A
20 Recycling Resources, Environmental Action
97 Redwood Controversy, The
153 Report of Central Midwest Representatives, National Audubon Society
106 Report to the President and to the Council on Environmental Quality
200 Research in Education (RIE)
129 Resident Outdoor Education: Policies, Procedures, and Planning
78 Sand County Almanac, A
4 Scholastic Earth Corps Series
191 Schools and the Environment, The
164 Science and Children
111 Science and Survival
36 Science in City and Suburb
168 Scientific American
161 Sensor Sheet
133 Seven Steps for Developing an Outdoor School Area for Teaching Science and Conservation
95 Seventies, The: Decade for Decisions
172 Sierra Club Bulletin
9 Small Worlds: A Field Trip Guide
183 SMEAC: Environmental Education Newsletter
7 Soil: A Field Trip Guide
101 Sounds and Silence
18 Suggested Activities Using the School and Its Surroundings as a Resource
140 Teacher's Handbook for Study Outside the Classroom, A
60 Teachers' Curriculum Guide to Conservation
163 Teachers' Environmental Enrichment Materials
98 Teaching for Survival
147 Teaching in the Outdoors
99 Teaching Science with Garbage
134 Teaching Soil and Water Conservation
82 Technology: Promises and Problems
201 Thesaurus of ERIC Descriptors
142 Tips and Tricks in Outdoor Education
101 Tragedy in the Laundromat
101 Troublesome Tailpipes
43 Understanding Ecology
63 Water — The Waste of Plenty
192 What Kind of Environment Will Our Children Have?
59 What Lives in the Water?
76 What's Ecology?
44 Where People Live Concept Pack
139 Wildlife Habitat Improvement
8 Winter: A Field Trip Guide
41 You and Your Environment

SUBJECT INDEX

Please note that all references are to consecutively numbered entries, not pages

AIR QUALITY

104 A Look at Our Environment
92 Can I Breathe the Air?
110 Crisis in Our Cities
100 Ecology, the Pollution Problem
19 Environmental Action: No Time to Waste
11 Environmental Education Activities
94 Environmental Pollution
88 Focus on Pollution
101 Give Earth a Chance Series
72 Our Environment V: Atmosphere
97 Pollution Game
107 Pollution: Man's Crisis
83 Pollution of the Atmosphere
106 Report to the President and to the Council on Environmental Quality
95 Seventies, The: Decade for Decision

BIOPHYSICAL CONCEPTS

58 A Child's Garden: A Guide for Parents and Teachers
35 Acclimatization: A Sensory Approach to Ecological Envolvement
56 Air Above, The Ground Below, The
116 Baker Nature Study Packet
119 Birds
92 Can I Breathe the Air?
68 Circle of the World
30 Crack in the Pavement, A
103 Curriculum Activities Guide to Water Pollution and Environmental Studies, A
115 Discovering Nature: 135 Nature Study Activities
114 Discovering Nature Indoors
113 Discovering Plants
112 Discovering the Outdoors
12 Ecolab: Learning Concepts
75 Ecology (LIFE Nature Library)
48 Ecology of the Forest
49 Ecology of the Sea
100 Ecology, the Pollution Problem
71 Elementary Science Study
34 Environmental Awareness, An Action Approach
11 Environmental Education Activities
122 Environmental Education for Intermediate Grades
123 Environmental Education for Junior High Grades
24 Environmental Education Instructional Activities
55 Environmental Education Objectives and Field Activities
53 Environmental Investigation Units
94 Environmental Pollution
29 Everything Changes
37 Experiences with Living Things
47 Freshwater Ecology
61 Guide to Environmental Education: Conservation of Natural Resources
42 How and Why Wonder Book of Ecology, The
5 I Wonder Why Readers
50 Instructor Ecology Series
73 Investigations in Ecology
66 Life Science Series
132 Man and His Environment
96 Man and the Environment
2 My Book of Things to See and Do in the Out-of-Doors
23 Observing Our Environment Through Our Senses
3 Organic Classroom, The
72 Our Environment V: Freshwater Communities, Atmosphere, Saltwater Communities
102 Pollution: Problems, Projects, and Mathematical Exercises
4 Scholastic Earth Corps Series
9 Small Worlds: A Field Trip Guide
7 Soil: A Field Trip Guide
60 Teachers' Curriculum Guide to Conservation
63 Water — The Waste of Plenty
59 What Lives in the Water?
8 Winter: A Field Trip Guide

ECOLOGY

35 Acclimatization: A Sensory Approach to Ecological Envolvement
6 Adventure in Environment
68 Circle of the World
86 Earth Island: An Introduction to Ecology in Action
75 Ecology (LIFE Nature Library)
40 Ecology
27 Ecology: The Game of Man and Nature
74 Ecology: The Study of Environment
71 Elementary Science Study
34 Environmental Awareness, An Action Approach
46 Extinction — The Game of Ecology
61 Guide to Environmental Education: Conservation of Natural Resources
69 Guide to the Teaching of Human Ecology
42 How and Why Wonder Book of Ecology, The
50 Instructor Ecology Series
66 Life Science Series
43 Understanding Ecology
76 What's Ecology?

LAND LABORATORIES

148 Classroom Out-of-Doors
137 Conservation Education Area to Enrich Your School, A
149 Curriculum Enrichment Outdoors
144 Field Trips: Ecology for Youth Leaders
145 Integrating Conservation Education into the Curriculum
132 Man and His Environment
136 Manual for Outdoor Laboratories: The Development and Use of Schoolgrounds as Outdoor Laboratories for Teaching Science and Conservation
21 Operation New York
143 Outdoor Activities for Environmental Studies
135 Outdoor Classrooms on School Sites
141 Outdoor Education
138 Planning a Nature Center
133 Seven Steps for Developing an Outdoor School Area for Teaching Science and Conservation

140 Teacher's Handbook for Study Outside the Classroom, A
147 Teaching in the Outdoors
142 Tips and Tricks in Outdoor Education
139 Wildlife Habitat Improvement

LAND USE

104 A Look at Our Environment
116 Baker Nature Study Packet
67 Benziger Ecology Series
26 Clean-Up
65 Contemporary Social Science Curriculum
25 Dilemma!
55 Environmental Education Objectives and Field Activities
64 Geography in an Urban Age: Habitat and Resources
16 Housing in the Urban Environment
28 Man in His Environment
45 Natural Resources Concept Pack
21 Operation New York
13 Our Man-Made Environment
97 Planet Management Game, The
97 Redwood Controversy, The
134 Teaching Soil and Water Conservation
82 Technology: Promises and Problems
44 Where People Live Concept Pack

NATURE

58 A Child's Garden: A Guide for Parents and Teachers
35 Acclimatization: A Sensory Approach to Ecological Envolvement
116 Baker Nature Study Packet
119 Birds
120 Book of Nature Activities, A
30 Crack in the Pavement, A
115 Discovering Nature: 135 Nature Study Activities
114 Discovering Nature Indoors
113 Discovering Plants
112 Discovering the Outdoors
12 Ecolab: Learning Concepts
37 Experiences with Living Things
127 Learning about Nature through Games
126 Learning about Nature through Indoor Gardening
128 Learning about Nature through Pets
2 My Book of Things to See and Do in the Out-of-Doors
117 Nature Recreation
121 Nature Study for Conservation
118 New Field Book of Activities and Hobbies, The
23 Observing Our Environment through Our Senses
1 Place to Live, A
125 Reader's Guide to Nature-Oriented Activities, A

RESIDENT OUTDOOR EDUCATION

35 Acclimatization: A Sensory Approach to Ecological Envolvement
131 Adventures in Outdoor Education and Interracial Understanding
130 Basic Steps in Planning Resident Outdoor Education Programs
148 Classroom Out-of-Doors
141 Outdoor Education
129 Resident Outdoor Education: Policies, Procedures, and Planning

URBAN ENVIRONMENT

104 A Look at Our Environment
67 Benziger Ecology Series
92 Can I Breathe the Air?
17 Community Resources for the Durham Child Development Center
89 Control of Domestic Rats and Mice
30 Crack in the Pavement, A
12 Ecolab: Learning Concepts
100 Ecology, the Pollution Problem
19 Environmental Action: No Time to Waste
90 Environmental Rat Control
10 Environmental Studies Packets
29 Everything Changes
64 Geography in an Urban Age: Habitat and Resources
101 Give Earth a Chance Series
16 Housing in the Urban Environment
15 Learning to Get Around
96 Man and the Environment
81 Man's Habitat — The City
21 Operation New York
91 Our Environment: Let's Work Together to Change This
97 Planet Management Game, The
36 Science in City and Suburb
95 Seventies, The: Decade for Decisions
18 Suggested Activities Using the School and Its Surroundings as a Resource
99 Teaching Science with Garbage

WATER QUALITY

104 A Look at Our Environment
103 Curriculum Activities Guide to Water Pollution and Environmental Studies, A
100 Ecology, the Pollution Problem
19 Environmental Action: No Time to Waste
11 Environmental Education Activities
94 Environmental Pollution
88 Focus on Pollution
47 Freshwater Ecology
101 Give Earth a Chance Series
72 Our Environment V: Freshwater Communities, Saltwater Communities
87 Our Polluted World
107 Pollution: Man's Crisis
84 Pollution of the Waters
106 Report to the President and to the Council on Environmental Quality
95 Seventies, The: Decade for Decision
63 Water — The Waste of Plenty
59 What Lives in the Water?

FORMAT INDEX

Please note that all references are to consecutively numbered entries, not pages

ACTIVITY KITS, WORK BOOKS, TEXTS

56 Air Above, the Ground Below, The
116 Baker Nature Study Packet
67 Benziger Ecology Series
92 Can I Breathe the Air?
115 Discovering Nature: 135 Nature Study Activities
12 Ecolab: Learning Concepts
40 Ecology
85 Ecological Science Series
19 Environmental Action: No Time To Waste
11 Environmental Education Activities
57 Environmental Education Studies
94 Environmental Pollution
10 Environmental Studies Packets I - IV
39 Examining Your Environment
88 Focus on Pollution
101 Give Earth a Chance Series
16 Housing in the Urban Environment
14 Introductory Unit to the Urban Environment
73 Investigations in Ecology
15 Learning To Get Around
2 My Book of Things to See and Do in the Out-of-Doors
13 Our Man-Made Environment
87 Our Polluted World
1 Place to Live, A
107 Pollution: Man's Crisis
102 Pollution: Problems, Projects, and Mathematical Exercises
59 What Lives in the Water?
41 You and Your Environment

CURRICULUM PROGRAMS, UNITS

6 Adventure in Environment
54 Community of Living Things
65 Contemporary Social Science Curriculum
71 Elementary Science Study
55 Environmental Education Objectives and Field Activities
52 Environmental Instruction
53 Environmental Investigation Units
64 Geography in an Urban Age: Habitat and Resources
66 Life Science Series
96 Man and the Environment
91 Our Environment: Let's Work Together to Change This
51 Project ICE: A Supplementary Program for Environmental Education
4 Scholastic Earth Corps Series
99 Teaching Science with Garbage

FILMSTRIPS

119 Birds
48 Ecology of the Forest, The
49 Ecology of the Sea, The
38 Environmental Awareness
31 My Senses and Me
32 Our Environment II: Sound and Noise
33 Our Environment III: Aesthetics
72 Our Environment V: Freshwater Communities, Atmosphere, Saltwater Communities
83 Pollution of the Atmosphere
84 Pollution of the Waters
93 Pollution: Our World in Crisis
20 Recycling Resources, Environmental Action
95 Seventies, The: Decade for Decisions

GAMES

104 A Look at Our Environment
26 Clean-up
25 Dilemma!
27 Ecology: The Game of Man and Nature
46 Extinction — The Game of Ecology
127 Learning about Nature through Games
97 Life Science Investigation Series
28 Man in His Environment
45 Natural Resources Concept Pack
20 Recycling Resources, Environmental Action
44 Where People Live Concept Pack

GUIDES, HANDBOOKS, MANUALS

58 A Child's Garden: A Guide for Parents and Teachers
35 Acclimatization: A Sensory Approach to Ecological Envolvement
131 Adventures in Outdoor Education and Interracial Understanding
130 Basic Steps in Planning Resident Outdoor Education Programs
148 Classroom Out-of-doors
17 Community Resources for the Durham Child Development Center
137 Conservation Education Area to Enrich Your School, A
89 Control of Domestic Rats and Mice
103 Curriculum Activities Guide to Water Pollution and Environmental Studies, A
149 Curriculum Enrichment Outdoors
105 Curriculum Overview for Developing Environmentally Literate Citizens
62 Education for Survival: Social Studies and Science Curriculum Guide
34 Environmental Awareness, an Action Approach
122 Environmental Education for Intermediate Grades: A Teachers' Manual
123 Environmental Education for Junior High Grades: A Teachers' Manual
24 Environmental Education Instructional Activities
70 Environmental Education Resource Guide
90 Environmental Rat Control
37 Experiences with Living Things
144 Field Trips: Ecology for Youth Leaders
61 Guide to Environmental Education: Conservation of Natural Resources
69 Guide to the Teaching of Human Ecology, A
145 Integrating Conservation and Outdoor Education into the Curriculum
132 Man and His Environment
81 Man's Habitat — The City

136 Manual for Outdoor Laboratories: The Development and Use of Schoolgrounds as Outdoor Laboratories for Teaching Science and Conservation
124 Nature in the City
117 Nature Recreation
121 Nature Study for Conservation
118 New Field Book of Activities and Hobbies, The
23 Observing Our Environment through Our Senses
21 Operation New York
3 Organic Classroom, The
143 Outdoor Activities for Environmental Studies
135 Outdoor Classrooms on School Sites
141 Outdoor Education
146 Outdoor Education: A Book of Readings
138 Planning a Nature Center
125 Reader's Guide to Nature-Oriented Activities, A
129 Resident Outdoor Education: Policies, Procedures, and Planning
36 Science in City and Suburb
133 Seven Steps for Developing an Outdoor School Area for Teaching Science and Conservation
18 Suggested Activities Using the School and Its Surroundings as a Resource
140 Teacher's Handbook for Study Outside the Classroom, A
60 Teachers' Curriculum Guide to Conservation
147 Teaching in the Outdoors
134 Teaching Soil and Water Conservation
142 Tips and Tricks in Outdoor Education
139 Wildlife Habitat Improvement

MULTI-MEDIA PACKETS

104 A Look at Our Environment
119 Birds
22 Clean the Scene
54 Community of Living Things
86 Earth Island: An Introduction to Ecology in Action
48 Ecology of the Forest, The
49 Ecology of the Sea, The
100 Ecology, the Pollution Problem
71 Elementary Science Study
32 Our Environment II: Sound and Noise
33 Our Environment III: Aesthetics
72 Our Environment V: Freshwater Communities, Atmosphere, Saltwater Communities
83 Pollution of the Atmosphere
84 Pollution of the Waters
20 Recycling Resources, Environmental Action
4 Scholastic Earth Corps Series

POSTERS, VISUALS

22 Clean the Scene
50 Instructor Ecology Series
45 Natural Resources Concept Pack
44 Where People Live Concept Pack

READERS

30 Crack in the Pavement, A
29 Everything Changes
5 I Wonder Why Readers
9 Small Worlds: A Field Trip Guide
7 Soil: A Field Trip Guide
8 Winter: A Field Trip Guide

GRADE LEVEL INDEX

Please note that all references are to consecutively numbered entries, not pages

PRIMARY GRADES

58 A Child's Garden: A Guide for Parents and Teachers
35 Acclimatization: A Sensory Approach to Ecological Envolvement
116 Baker Nature Study Packet
22 Clean the Scene
26 Clean-up
65 Contemporary Social Science Curriculum
30 Crack in the Pavement, A
12 Ecolab: Learning Concepts
100 Ecology, the Pollution Problem
62 Education for Survival: Social Studies and Science Curriculum Guide
71 Elementary Science Study
38 Environmental Awareness
11 Environmental Education Activities
55 Environmental Education Objectives and Field Activities
24 Environmental Education Instructional Activities
70 Environmental Education Resource Guide
57 Environmental Education Studies
53 Environmental Investigation Units
90 Environmental Rat Control
10 Environmental Studies Packets I - IV
29 Everything Changes
37 Experiences with Living Things
61 Guide to Environmental Education: Conservation of Natural Resources
5 I Wonder Why Readers
73 Investigations in Ecology
2 My Book of Things to See and Do in the Out-of-Doors
23 Observing Our Environment through Our Senses
21 Operation New York
3 Organic Classroom, The
51 Project ICE: A Supplementary Program for Environmental Education
9 Small Worlds: A Field Trip Guide
7 Soil: A Field Trip Guide
60 Teachers' Curriculum Guide to Conservation
99 Teaching Science with Garbage
8 Winter: A Field Trip Guide

INTERMEDIATE GRADES

58 A Child's Garden: A Guide for Parents and Teachers
104 A Look at Our Environment
35 Acclimatization: A Sensory Approach to Ecological Envolvement
6 Adventure in Environment
56 Air Above, the Ground Below, The
116 Baker Nature Study Packet
67 Benziger Ecology Series
120 Book of Nature Activities, A
92 Can I Breathe the Air?
68 Circle of the World
22 Clean the Scene
17 Community Resources for the Durham Child Development Center
65 Contemporary Social Science Curriculum
115 Discovering Nature: 135 Nature Study Activities
86 Earth Island: An Introduction to Ecology in Action
12 Ecolab: Learning Concepts
85 Ecological Science Series
40 Ecology
75 Ecology (LIFE Nature Library)
48 Ecology of the Forest, The
49 Ecology of the Sea, The
100 Ecology, the Pollution Problem
74 Ecology: The Study of Environment
71 Elementary Science Study
19 Environmental Action: No Time to Waste
34 Environmental Awareness, an Action Approach
11 Environmental Education Activities
122 Environmental Education for Intermediate Grades: A Teachers' Manual
24 Environmental Education Instructional Activities
55 Environmental Education Objectives and Field Activities
70 Environmental Education Resource Guide
57 Environmental Education Studies
52 Environmental Instruction
53 Environmental Investigation Units
90 Environmental Rat Control
10 Environmental Studies Packets I - IV
39 Examining Your Environment
88 Focus on Pollution
101 Give Earth a Chance Series
61 Guide to Environmental Education: Conservation of Natural Resources
16 Housing in the Urban Environment
42 How and Why Wonder Book of Ecology, The
50 Instructor Ecology Series
14 Introductory Unit to the Urban Environment
73 Investigations in Ecology
127 Learning about Nature through Games
126 Learning about Nature through Indoor Gardening
128 Learning about Nature through Pets
15 Learning to Get Around
66 Life Science Series
28 Man in His Environment
81 Man's Habitat — The City
31 My Senses and Me
45 Natural Resources Concept Pack
23 Observing Our Environment through Our Senses
21 Operation New York
91 Our Environment: Let's Work Together to Change This
32 Our Environment II: Sound and Noise
33 Our Environment III: Aesthetics
72 Our Environment V: Freshwater Communities, Atmosphere, Saltwater Communities
13 Our Man-Made Environment
87 Our Polluted World
1 Place to Live, A
107 Pollution: Man's Crisis
83 Pollution of the Atmosphere
84 Pollution of the Waters
93 Pollution: Our World in Crisis
51 Project ICE: A Supplementary Program for Environmental Education
4 Scholastic Earth Corps Series

9 Small Worlds: A Field Trip Guide
7 Soil: A Field Trip Guide
18 Suggested Activities Using the School and its Surroundings as a Resource
60 Teachers' Curriculum Guide to Conservation
99 Teaching Science with Garbage
59 What Lives in the Water?
44 Where People Live Concept Pack
8 Winter: A Field Trip Guide

JUNIOR HIGH

58 A Child's Garden: A Guide for Parents and Teachers
104 A Look at Our Environment
35 Acclimatization: A Sensory Approach to Ecological Envolvement
116 Baker Nature Study Packet
67 Benziger Ecology Series
119 Birds
120 Book of Nature Activities, A
92 Can I Breathe the Air?
68 Circle of the World
22 Clean the Scene
54 Community of Living Things
89 Control of Domestic Rats and Mice
103 Curriculum Activities Guide to Water Pollution and Environmental Studies, A
115 Discovering Nature: 135 Nature Study Activities
114 Discovering Nature Indoors
113 Discovering Plants
112 Discovering the Outdoors
75 Ecology (LIFE Nature Library)
27 Ecology: The Game of Man and Nature
123 Environmental Education for Junior High Grades: A Teachers' Manual
55 Environmental Education Objectives and Field Activities
70 Environmental Education Resource Guide
53 Environmental Investigation Units
10 Environmental Studies Packets I - IV
46 Extinction — The Game of Ecology
47 Freshwater Ecology
101 Give Earth A Chance Series
16 Housing in the Urban Environment
50 Instructor Ecology Series
14 Introductory Unit to the Urban Environment
127 Learning about Nature through Games
126 Learning about Nature through Indoor Gardening
128 Learning about Nature through Pets
15 Learning to Get Around
97 Life Science Investigation Series
96 Man and the Environment
81 Man's Habitat — The City
21 Operation New York
87 Our Polluted World
118 New Field Book of Activities and Hobbies, The
83 Pollution of the Atmosphere
84 Pollution of the Waters
93 Pollution: Our World in Crisis
102 Pollution: Problems, Projects, and Mathematical Exercises
51 Project ICE: A Supplementary Program for Environmental Education
20 Recycling Resources, Environmental Action
36 Science in City and Suburb
95 Seventies, The: Decade for Decisions
60 Teachers' Curriculum Guide to Conservation
99 Teaching Science with Garbage
82 Technology: Promises and Problems
43 Understanding Ecology
63 Water — The Waste of Plenty
41 You and Your Environment

SENIOR HIGH

58 A Child's Garden: A Guide for Parents and Teachers
104 A Look at Our Environment
119 Birds
68 Circle of the World
22 Clean the Scene
89 Control of Domestic Rats and Mice
103 Curriculum Activities Guide to Water Pollution and Environmental Studies, A
25 Dilemma!
77 Dimensions of Change
114 Discovering Nature Indoors
113 Discovering Plants
112 Discovering the Outdoors
75 Ecology (LIFE Nature Library)
55 Environmental Education Objectives and Field Activities
70 Environmental Education Resource Guide
53 Environmental Investigation Units
94 Environmental Pollution
10 Environmental Studies Packets I - IV
46 Extinction — The Game of Ecology
47 Freshwater Ecology
64 Geography in an Urban Age: Habitat and Resources
69 Guide to the Teaching of Human Ecology, A
16 Housing in the Urban Environment
14 Introductory Unit to the Urban Environment
15 Learning to Get Around
81 Man's Habitat — The City
118 New Field Book of Activities and Hobbies, The
21 Operation New York
87 Our Polluted World
83 Pollution of the Atmosphere
84 Pollution of the Waters
51 Project ICE: A Supplementary Program for Environmental Education
78 Sand County Almanac, A
95 Seventies, The: Decade for Decisions
60 Teachers' Curriculum Guide to Conservation
99 Teaching Science with Garbage
43 Understanding Ecology
63 Water — The Waste of Plenty
76 What's Ecology?

RELATED DISCIPLINE INDEX

Please note that all references are to consecutively numbered entries, not pages

LANGUAGE ARTS

104 A Look at Our Environment
6 Adventure in Environment
131 Adventures in Outdoor Education and Interracial Understanding
30 Crack in the Pavement, A
29 Everything Changes
5 I Wonder Why Readers
132 Man and His Environment
31 My Senses and Me
3 Organic Classroom, The
9 Small Worlds: A Field Trip Guide
7 Soil: A Field Trip Guide
8 Winter: A Field Trip Guide

MATHEMATICS

131 Adventures in Outdoor Education and Interracial Understanding
132 Man and His Environment
3 Organic Classroom, The
102 Pollution: Problems, Projects, and Mathematical Exercises
99 Teaching Science with Garbage

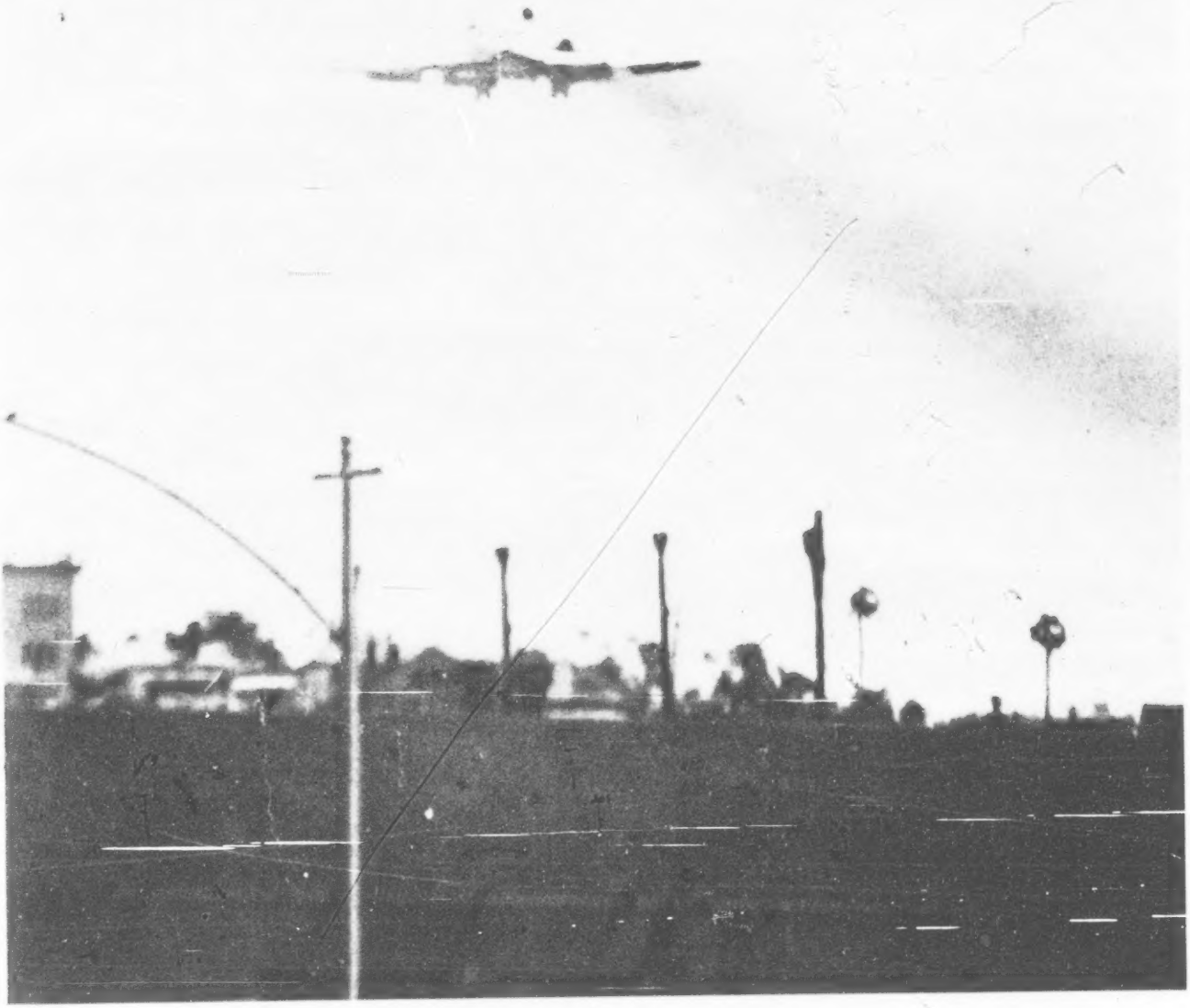
SCIENCE

6 Adventure in Environment
131 Adventures in Outdoor Education and Interracial Understanding
56 Air Above, the Ground Below, The
119 Birds
92 Can I Breathe the Air?
103 Curriculum Activities Guide to Water Pollution and Environmental Studies, A
114 Discovering Nature Indoors
113 Discovering Plants
112 Discovering the Outdoors
85 Ecological Science Series
62 Education for Survival: Social Studies and Science Curriculum Guide
71 Elementary Science Study
11 Environmental Education Activities
24 Environmental Education Instructional Activities
52 Environmental Instruction
61 Guide to Environmental Education: Conservation of Natural Resources
42 How and Why Wonder Book of Ecology, The
5 I Wonder Why Readers
66 Life Science Series
132 Man and His Environment
3 Organic Classroom, The
72 Our Environment V: Freshwater Communities, Atmosphere, Saltwater Communities
1 Place to Live, A
83 Pollution of the Atmosphere
84 Pollution of the Waters
107 Pollution: Man's Crisis
102 Pollution: Problems, Projects, and Mathematical Exercises
51 Project ICE: A Supplementary Program for Environmental Education
20 Recycling Resources, Environmental Action
111 Science and Survival
36 Science in City and Suburb
60 Teachers' Curriculum Guide to Conservation
99 Teaching Science with Garbage
43 Understanding Ecology
63 Water — The Waste of Plenty

SOCIAL STUDIES

104 A Look at Our Environment
6 Adventure in Environment
131 Adventures in Outdoor Education and Interracial Understanding
67 Benziger Ecology Series
22 Clean the Scene
26 Clean-up
17 Community Resources for the Durham Child Development Center
65 Contemporary Social Science Curriculum
89 Control of Domestic Rats and Mice
110 Crisis in Our Cities
25 Dilemma!
77 Dimensions of Change
86 Earth Island: An Introduction to Ecology in Action
27 Ecology: The Game of Man and Nature
74 Ecology: The Study of Environment
62 Education for Survival: Social Studies and Science Curriculum Guide
34 Environmental Awareness, an Action Approach
70 Environmental Education Resource Guide
88 Focus on Pollution
64 Geography in an Urban Age: Habitat and Resources
101 Give Earth a Chance Series
69 Guide to the Teaching of Human Ecology, A
16 Housing in the Urban Environment
108 Hungry Planet, The
14 Introductory Unit to the Urban Environment
15 Learning to Get Around
132 Man and His Environment
96 Man and the Environment
28 Man in His Environment
3 Organic Classroom, The
91 Our Environment: Let's Work Together to Change This
32 Our Environment II: Sound and Noise
33 Our Environment III: Aesthetics
13 Our Man-Made Environment
87 Our Polluted World
97 Planet Management Game, The
93 Pollution: Our World in Crisis
97 Pollution Game, The
109 Population Bomb, The
51 Project ICE: A Supplementary Program for Environmental Education
97 Redwood Controversy, The
36 Science In City and Suburb
95 Seventies, The: Decade for Decisions
18 Suggested Activities Using the School and its Surroundings as a Resource
60 Teachers' Curriculum Guide to Conservation
44 Where People Live Concept Pack

POLLUTED
UNSAFE
FOR
SWIMMING



An Annotated Catalog of

ENVIRONMENTAL LEARNING RESOURCES

Prepared under an ESEA Title III grant by the
Center for the Development of Environmental Curriculum
Willoughby — Eastlake City Schools
Willoughby, Ohio
Dennis M. Wint, Director

This publication is available from the
Ohio Department of Education
Division of Instructional Materials
518 South Wall Street
Columbus, Ohio 43215

The work presented or reported herein was performed pursuant to a grant from the Ohio Department of Education, ESEA Title III Office. However, the opinions expressed herein do not necessarily reflect the position of the Ohio Department of Education, and no official endorsement by the Ohio Department of Education should be inferred.

BEST COPY AVAILABLE

Ohio Department of Education

Martin W. Essex
Superintendent of Public Instruction

Franklin B. Walter
Deputy Superintendent

G. Robert Bowers
Assistant Superintendent, Instruction

Warner R. Moore
Administrator of Environmental Education

John E. Brown
Director,
Division of Elementary and Secondary Education

Eugene Knight
Supervisor, Environmental Education

Franklin S. Scott
Consultant, ESEA Title III

Printed on 100% Recycled Paper